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The contribution of perceptions and personal attributes of the administrative change team toward initiating massive educational change

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by

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NATURE OF THE STUDY

Introduction

We are living in an era characterized by rapid technological and sociological change. The processes of research and invention have accelerated the acquisition of knowledge to the point of doubling the sum total of the world's body of knowledge every two and one-half years. Virtually every profession, every institution, is now lagging far behind in applying the newly acquired information to actual practices - the medical profession being the bright exception with an estimated time-lag of only two years from discovery to practice. The serenity of our sociological structure has been severely shaken by those who demand their rights as individuals and who would force social change onto a reluctant society. Recent generations accept technological changes as inevitable, and further believe change to be preferable to persistence. Change - through necessity - has become an inseparable part of the American scene.

School districts are being called upon to analyze and initiate massive educational changes concerning the reallocation of human and material resources. The importance of the members of the Board of Education and the administration in the initiation of an innovation for the improvement of the instructional process can scarcely be overemphasized. In order for a change to be meaningful, significant, and lasting within a given school district, the innovation must be fully supported by the Board of Education, the Superintendent of Schools,

the Building Principal, and the Teaching Staff. Soon after the initiation of a massive change, the student body and the community must also be meaningfully involved. The emphasis for change may come from any group in the change team. However, the nature of the duties, responsibilities, and training of the administrators, and the strategic position of the board members, allow them to exert great influence for projected innovations.

The thesis of this study is that the personal and vocational attributes of the administrative change team, and the manner in which they perceive the educational process, contribute to a readiness and willingness to initiate massive educational change. Given the identification of such common characteristics, a change team could be assembled that would enhance the probability of the successful initiation of a massive educational change.

A major change in the allocation of school personnel, resources, and materials was introduced by Robert N. Bush and Dwight W. Allan of Stanford University in 1964 when they published their ideas in their book A New Design For High School Education. The "New Design" assumes a flexible master schedule which allows each phase of instruction to command the needed time allotment best suited for its purpose. This massive change demands a significant commitment on the part of the faculty, administration, and Board of Education in terms of financial support, in-service education, and increased student and staff involvement in the learning process.

The variable time requirements of the "New Design" were solved

by a computer scheduling program developed by Professor Robert V. Oakford of Stanford University. The program, called Stanford School Scheduling System (SSSS), allows the various phases of the "New Design" to be scheduled in a multitude of varying time requests or "modules". The generation of the school's master schedule by the SSSS program has introduced a capacity and flexibility which allows school administrators to seriously address problems of material allocations, efficient scheduling of various learning activities, and most important, how to allow for the individual differences in children to insure they will have the opportunity to develop their talents fully.

The initiation of SSSS scheduling and the massive educational changes which it allows represents a significant commitment on the part of the administrative change team. Do these members of districts which have changed display common personal and vocational attributes, and common perceptions of educational processes and problems which allow them to initiate a massive change which are different from those displayed by their more traditional counterparts?

Statement of the Problem

The problem addressed in this study was the determination and identification of those characteristics exhibited by School Board Members, Superintendents, and Building Principals who authorized and committed their district's resources in initiating the Stanford School Scheduling System which are significantly different from their counterparts in similar school districts that have not initiated SSSS.

Specific questions which will be answered in this study are:

1. Are there distinguishing personal characteristics between members of the administrative change team who initiated SSSS and their traditional counterparts?
2. Does the administrative change team perceive their school's climate to be more open as compared to their tranditional counterparts?
3. Are the attitudes displayed by the administrative change team more positive toward public school education in general than their tranditional counterparts?
4. Does the administrative change team view their school's environmental achievement press more positively than their traditional counterparts?

In answering these questions the following null hypotheses will be tested:

THERE IS NO SIGNIFICANT DIFFERENCE BETWEEN SCHOOL BOARD MEMBERS WHO HAVE AND HAVE NOT INITIATED STANFORD SCHOOL SCHEDULING SYSTEMS IN REGARD TO:

Ho: 1 Their Selected Personal Characteristics.

- a. Age
- b. Ancestral background
- c. Education
- d. Family
- e. Income
- f. Marital status
- g. Occupation
- h. Political affiliation
- i. Religious affiliation
- j. Sex
- k. Tenure - present educational position

Ho: 2 Their Perception of the School's Open or Closed Climate.

Ho: 3 Their Attitudes Toward Public School Education.
- a. School costs
- b. Teaching methods and procedures
- c. Policy making
- d. Curriculum
- e. Teachers

Ho: 4 Their Perception of the School's Environmental Achievement Press.

THERE IS NO SIGNIFICANT DIFFERENCE BETWEEN SUPERINTENDENTS WHO HAVE AND HAVE NOT INITIATED STANFORD SCHOOL SCHEDULING SYSTEM IN REGARD TO:

Ho: 5 Their Selected Personal Characteristics.

Ho: 6 Their Perception of the School's Open or Closed Climate.

Ho: 7 Their Attitudes Toward Public School Education.

Ho: 8 Their Perception of the School's Environmental Achievement Press.

THERE IS NO SIGNIFICANT DIFFERENCE BETWEEN BUILDING PRINCIPALS WHO HAVE AND HAVE NOT INITIATED STANFORD SCHOOL SCHEDULING SYSTEM IN REGARD TO:

Ho: 9 Their Selected Personal Characteristics.

Ho: 10 Their Perception of the School's Open or Closed Climate.

Ho: 11 Their Attitudes Toward Public School Eduction.

Ho: 12 Their Perception of the School's Environmental Achievement Press.

Definition of Terms

The following definition of terms is presented to give clarity to their use and meaning:

1. Administrative Change Team: consists of members of the Board of Education, the Superintendent, and the Building Principal.
2. Attitudes and Perceptions: are feelings or emotions toward a given idea or stimulus. Attitudes are the frame of reference in which a

person evaluates a situation. Attitudes may be in the cognitive or affective domain, and may be real or imagined.

3. Computer Generated Schedules: are schedules which have been constructed and loaded by a computer program within the perimeters specified by the school. Two prime examples of computer generated schedule programs are Stanford School Scheduling System (SSSS) and Generalized Academic Simulation Program (GASP).
4. Loading Programs: utilize computer assistance in scheduling or loading student course requests into a predetermined master schedule.
5. Environmental Press: describes stimuli emanating from the environment affecting the individual's perception of the learning environment.
6. Public Secondary Schools: are junior high schools, middle schools, senior high schools, or junior-senior high schools which are supported by public funds for the general education of the students in a given school district.
7. Building Principal: is the head administrator or supervisory teacher of the attendance unit in which the SSSS program was initiated.
8. Superintendent: is the chief administrator hired by the School Board to direct and carry out the policies of the district.
9. Traditional Schools: for the purpose of this study, are those that are not utilizing the computer-built master schedules. They may be employing mechanical loading techniques, however.

Delimitations of the Study

The scope of this study was confined to selected midwest public secondary schools that have initiated the Stanford School Scheduling System during the past five years and are currently utilizing the system, and to those specific board members, superintendents, and building principals who were directly involved with the decision to initiate the SSSS program. Members from the paired control schools were selected from the same point in time as their counterpart SSSS school. This study did not involve any private or independent schools nor any elementary schools.

The study was further limited by the selection of a limited number of representative areas with which to measure the respondent's perception of the school's environmental achievement press, their perception as to the openness or closed climate in their schools, and their attitudes toward public school education in general. Further, the respondent's personal characteristics were limited to certain selected characteristics.

The control schools were selected to match the SSSS schools in terms of size, geography, apparent wealth, and proximity to universities and large cities.

REVIEW OF THE LITERATURE

Introduction

Educators have been notoriously slow in their acceptance of new ideas and innovations. Marcum (42, p. 3) reported that Rogers (1966) estimated that 2.5 percent of the schools are innovators; 13.5 percent are early adopters; 34 percent follow somewhat later; 34 percent follow much later; and 16 percent of the schools are notorious laggards. Marcum estimated it may take fifty years for the laggard school districts to eventually adopt an idea. A similar position was indicated by Steve Westendorf (72, p. 16) when he compiled the following historical excerpt from the ECHOES of 1913:

> January - At the recent meeting of the National Education Association in Chicago, reports based on investigations in 25 states were read in which it was declared that the systems of high school teaching is just where it was 30 years ago, and that this backwardness is due to the fact that high schools prepare pupils for college rather than for life.

In the Review of Literature, six major areas were addressed: 1) Educational Change; 2) Initiators of Change; 3) Personal Characteristics; 4) Organizational Climate; 5) Attitudes and Criticisms; and 6) Environmental Press.

Educational Change

At the present time, our public schools appear to be caught up in a need to innovate or change our educational approaches. The innovations are as varied as the apparent needs of the districts, and the acceptance

of such innovations appear to receive a variety of degrees of acceptance. Alexander (2, p. 22) stated three reasons for the widespread interest in innovation: 1) recognition that schools in general have lagged behind in the era of change of living; 2) previous lack of funding and personnel for attempting to look ahead which Alexander feels is being relived through federal funding, particularly Title III of the ESEA 1965; and 3) the known relationship of innovation and experimentation to morale and productivity. Novelty breeds enthusiasm.

Hillson and Hyman (31, p. 287) quoted Nicholas C. Polos as stating:

> There are as many attitudes as there are educators, ranging all the way from the "time is not ripe" educator to the "hollow imitator for publicity purposes" educator suffering from that common school ailment known as "bandwagonism". Somewhere in the middle of this range is the judicious educator who has carefully weighed all the possibilities, examined many programs that are in the field, and then proceeded with intelligent action. He is aware of E. Dale's statement that wisely counsels: "But it is the weak man, not the strong man who wants absolute certainty. It is the essence of leadership not only to live successfully with uncertainty, but also be challenged by it . . ."

Huntington (35, p. 13) also cautions that some innovations appear to be "administrative gimmicks" that do little to change the school or to improve the educational setting. Huntington (35, pp. 36-37) further states that while innovations appear to be an attempt to change education to keep pace with our ever-changing society, more intensive research is needed to evaluate which innovations have effectively fulfilled their objectives. Gibbons (22, p. 31) also stated that modification of content or organization alone would "tend to be superficial". He felt innovations should "involve change in the relationship between the student and his teachers concerning the act of learning,

change in the opportunities for learning (range of situations, facilities, personnel), and change in the distribution of authority." Keeley (36, p. 304) approached innovation from a broader point of view when he indicated that "major criterion for innovation must be that it seeks to change what existed so that what is created is better for the society which it serves." Keeley further indicated that changes within any particular institution may be based on three approaches:

1. on a chance factor
2. on a desire to change just to try something new
3. on a pragmatic plan of action

Discrepancy arose when the influence of money upon innovation was discussed. Hughes (34, 73-A), Marcum (42, 2932-A), Mort (46, pp. 199-200), and Ross (59, p. 15) reported that districts which spent the most money per pupil were the first to adopt an innovation, and conversely, those systems which were last to adopt innovations spent the least per pupil. Neither Hilfiker (29, p. 101) nor Carlson (13, p. 62) could confirm this observation. Carlson further defined five characteristics of innovations which he felt contributed to the fate of an innovation:

1. Relative Advantage - the degree to which an innovation is superior to ideas it supersedes.
2. Compatibility - the degree to which an innovation is consistent with existing values and past experiences of the adopters.
3. Complexity - the degree to which an innovation is relatively difficult to use.
4. Divisibility - the degree to which an innovation may be tried on a limited basis.

5. Communicability - the degree to which the results of an innovation may be diffused to others.

Buchan (10, p. 300) echoed the thoughts that change may not only be desirable, but also imperative if the schools are to keep pace with the preponderant changes of our society. Buchan stated: "The key to success lies in preparing the ground carefully for its acceptance." Goslin (23, p. 19) was also concerned about proper planning when he stated: "Don't start talking about magnificent innovations in curriculum unless you are willing to face up to some innovations in the structure and time alloted to education, because you will just be coming back the next day saying you already have more than you can do."

J. Lloyd Trump had much to do with showing a different time allotment to allow innovations to take place. Huntington (35, p. 16) credited Trump with being more instrumental in igniting recent innovation that any other author by pointing the way toward overcoming organizational handicaps that have bound our schools for decades. Trump predicted the school of the future would be developed around three kinds of activities; large group, small group, and independent study. Trump (70, p. 14) stated: "An underlying purpose of the school (of the future) will be to develop ability to study, think, and solve problems in contrast to today's emphasis on memorizing facts . . . the emphasis will be put on the goal of helping the student develop the ability to solve problems on his own." Hillson and Hyman (31, p. 264) saw the flexibility of the Trump model and the flexible scheduling of the computer programs as a thrust toward innovations. "This flexibility in arrangement and use of time has several concomitants. It is not

only demanded by other innovations, but it also serves to permit still more innovation." They saw positive educational value in allowing the student responsibility to schedule himself for at least part of his school day, and having significant freedom of movement during the school day. However, Leigh (40, 3640-A) asked the question "Does Modular Scheduling Make a Difference?" and reported no significant differences in student attitudes and opinions, yet he reported significant difference both in citizenship grades and academic grades (both at the .01 level). His study was limited to one school and 86 students, and it is considered that this narrow band of responses limited the validity of Leigh's study.

Backen (4, pp. 367-368) likens flexible scheduling to a learning tool and credits the procedure with the following: 1) generate more active learning situtations for students; 2) give teacher and student time for the personal relationship between them that is essential to good education; 3) promote self-learning, self-discipline, and self-confidence in individual students; 4) create opportunities for varied and creative in-school supplementary learning activities; 5) aid us in eliminating some of the deadly repetition and irrelevance that has plagued students; and 6) can foster a climate of mutual trust and respect among teachers and students by making them partners rather than adversaries in the process of learning.

In the newsletter Schoolhouse from the Educational Facilities Laboratories (61, pp. 4-5), the editors stated:

> Computer scheduling of large high schools has become commonplace. The obvious advantage for saving time and effort makes such

> operations almost mandatory.
>
> But in nearly every case, scheduling is still only partially computerized, since students are assigned to a matrix of classes that had been scheduled by hand. If the master schedule doesn't properly respond to student needs, no amount of machine time is going to overcome that difficulty.
>
> There have been two computer programs that made it possible to build a master schedule and to assign students into it. But since both are extremely sophisticated and expensive to operate they have been used in only a few hundred schools.

Wiley (73, p. 15), in considering the amount of reallocation necessary of both human and material resources, stated: "It is assumed that any school contemplating the design of a computerized schedule is contemplating the redesign of a learning program quite different from that which it has."

Purdy (53, pp. 296-297) defined innovation as "the creative selection, organization, and utilization of human and material resources in new and unique ways which result in the attainment of a higher level of achievement of the defined goals and objectives." Among his stated seven facilitating factors for innovational practices were: 1) an organization, a structure, a system that permitted, encouraged, and facilitated change; and 2) leadership, wherever it occurred (teacher, principal, superintendent, custodian, bus driver, board member, lay person), that was dedicated to study, to planning, and to implementation of adopted plans for growth and improvement.

Initiators of Change

The review of literature revealed a variety of definitions of a "change agent", and a proliferation of opinions as to the most effective method or person to initiate change in the public secondary schools. Beal (5, p. 1) represented the sociologist view point when he stated that most social changes result from a combination of endogenous and exogenous change. Beal defined "instigators" or change agents as "those individuals or groups attempting to bring about change or giving aid to those attempting to accomplish change." Beal also concluded that while some authors limited their definition to professional aids outside the system, he feels it can and has been applied to individuals or groups within the system and to "non-professionals" such as officers of organizations, lay leaders, etc. Meadows (43, p. 54) defined the term "change agent" on three levels: 1) the innovators, including the discoverers, inventors, elaborators, systematizers, codifiers, promulgators, and other developers of novelty; 2) donors, referring to the organizations responsible for the mobilizing, shaping, transporting, transmitting, merchandising, informing, propagandizing activities of the human carriers of novelty; and 3) acceptors, including the individuals, associations, and institutions which absorb the novelty as part of the "going concern" which they themselves in point of fact are. Carlson (13, p. 16) stated a more general definition of change agent in "an individual or a group who attempts to influence the adoption decisions in the direction felt to be desirable by the organization or unit within the organization." Brickell (7, p. 256) bisected

local change agents into two groups: 1) the public and the board working from an external position; and 2) the administration and the teacher working internally. Brickell noted that teachers are not change agents for innovations of major scope.

Robinson (57, p. 3) and Reeder (55, p. 1) agreed that no public school position is more important than that of school board members. They felt the boards are responsible for the schools, and the school of today will largely determine what the citizens of the next generation will be. School board members should, therefore, "be among the most competent and highly respected residents of the community." Heisler (26, 4901-A) determined in his dissertation that the boards of education of his study's sample schools were more willing to adopt innovative practices than the superintendents perceived them to be, and that change agents were essential to large percentages of change. Heisler further reported that a combination of change agents were more indicative to change. Hencley (27, pp. 308-311) endorsed the importance of the boards of education in innovation when he stated:

> Policies of boards of education represent explicit and implied recognitions of legitimized value allocations which are expected to prevail within educational systems . . . pressures for innovation (or proposals for change) may be interpreted as demands for reallocation, realignment, or redistribution of value outcomes in a system.

Pellegrin (51, p. 15) stated: "Innovations are channeled into the local community from the outside, and their introduction into the local community depends primarily upon the superintendent." Foster (19, p. 288) also gave his endorsement of change agent to the superintendent, while Mims (45, 1369-A) concluded that both superintendents and

principals were the main initiators of innovations in Arkansas. Carlson (13, p. 61), on the other hand, indicated the principal was the key individual in the innovative process, and Wiley (73, p. 17) agreed, stating: "The first, and most critical, component of redesign is leadership in the principal's office." Hilfiker (29, p. 100) reported no significant difference existed between the executive professional leadership of the principals of a school system, but he did report a 10 level of significance and suggested it worthy of further investigation.

Pellegrin (51, p. 8) indicated that "studies dealing with teacher's roles as innovators at the classroom level have consistently found that teachers are not major innovators . . ." Pellegrin cited two major reasons: "1) there is a lack of established, institutionalized procedures for disseminating what is gained from innovative effort, and 2) that pressures for conformity to established procedures are severe, i.e., the teacher is constrained by the environment - both formal and informal - in which he works."

Regardless of the individual or group of individuals who initiate the innovation, Addis (1, p. 25) pointed that "Authority is a critical element in innovation, because proposed changes generate mixed reactions which can prevent consensus among peers and result in stagnation." Leeper (39, p. 284) cautioned that innovations will be "self-defeating and futile if their advocates fail to take into account the feelings, motivations, values, and needs of the people concerned."

Personal Characteristics

The review of literature reveals an abundance of studies that have addressed themselves to the personal and common characteristics of boards of education, superintendents, and to a lesser degree, the school principal. In more recent years, several studies have attempted to relate these common characteristics to insight, innovativeness, open and closed climate of the organization, criticisms of education, etc. Hilfiker (29, p. 107) stated:

> Professional personnel employed by school systems appear to differ in their readiness to accept and support change and innovation. Research is needed which will examine the characteristics of persons who prefer to work in innovative environments and those who prefer to work in stable environments. It is possible that school systems that are either innovative or traditional and unchanging to the extreme could hire personnel who might supply the characteristics which would bring the system into a state of controlled change or equilibrium.

School board members

Over 75 studies have been conducted concerning the social characteristics of the boards of education. Table 1 displays data collected by Counts (16, 1920), Vander Naald (71, 1933), National Education Association Research Division (47, 1946), Brown (9, 1951), Tiedt (67, 1962), and Robinson (57, 1968). Although each study was conducted in different years, under different circumstances, and for different reasons, they appear to be representative of all studies in relation to the personal and social characteristics of board members throughout this period of time. The Counts study dealt primarily with urban boards of education in cities of 2,500 and up; Vander Naald's study was limited to Iowa board members in towns of less than 2,500

Table 1. Representative studies of board members' personal characteristics

Variables	Counts (1920)	Brown (1951)	Neard (1946)	Vander Naald (1933)	Tiedt (1962)	Robinson (1968)
Age	48.3	48.3	48.5	45.3	43.0	45.2
Income	4000	9000	4000		9000	11994
Males	85.7	86.4	90	96.3	91	91.99
H.S. educ	31		42	29.1		93.37
With some college	46.0	67.0			61	
College grads			30			
Avg years educ						14.00
Prof, tech or mgmt	55.0	69.3		13.1*	61	29.28 20.72
Farm mgmt				42.3		37.29
Children			87	96.7	92	
in school	53.0	52.9		75.8		82.05
Tenure in years	4.1		6.7	4.1	4.7	5.18
Protestant					82	88.67
Catholic						5.25
Republican					64	64.92
Democrat						22.54
Pd real estate taxes						92.54

*Professional only.

population; Robinson's study was also limited to the State of Iowa, but it contained responses from all sizes of communities; Brown conducted a nationwide study of urban boards in cities of 5,000 and up to 300,000 population; the NEA Research Division's study was also nationwide, and was based upon 3,068 replies; and the Tiedt study was a cooperative study of board members in the Willamette Valley of Oregon. Analysis of the data represented in these studies over the past 50 years revealed the following observations:

1. There has been a remarkable stability of the board composition in respect to age, sex, and professional-technical-managerial occupations.
2. A trend toward longer tenure on the board of education may be indicated. Exceptions must be made for the years involving and immediately succeeding World War II which would tend to lengthen tenure of those members able to serve. However, both Tiedt and Robinson reported an increased number of years service.
3. The years of education obtained by board members has continued to increase - spectacularly so in the past two decades in relation to the percentage of members completing high school.
4. Children in school continued to be a characteristic of a substantial number of board members, particularly in the rural communities.

Stabile (64, 4255-A) reported similar findings when he concluded:

> The typical Ohio school board member can be characterized as being male, 46 years old (mean), occupationally managerial or

> professional, Republican, caucasian, Protestant, and salaried. He earns $17,000 a year (mean), has completed 14.29 years of formal education, and rates himself as slightly liberal on education matters.

Stabile also reported that "city, suburban, and rural school board members responded similarly toward attitude factors."

Robinson (57, p. 5) reported the social composition of the board to be significant in reflection of their attitudes and beliefs toward educational purpose. He quoted Arnett (3, p. 3) as reinforcing this observation when Arnett stated: "Few will deny the importance of the role of school board members in the American system of education . . . How educators deal with these problems will be determined not only by their own social philosophies and viewpoints, but to a very large extent by the social beliefs and attitudes of school board members."

Burris (11, pp. 12-13) in his article titled "The Search For School Board Talent: There Should Be An Easier Way - Or Should There?" appeared to be cautioning his readers against statistical selection of board members when he pointed out that "the qualifications for board membership, through law and practice, aren't much." Burris further stated:

> Can we conclude there is no relation between stated board qualifications and who gets selected? Not quite. Because there is something to the man who is willing to run, something that sets him apart in his desire to give his best capacities to the public welfare. Without this difficult-to-pinpoint quality, and judged on the basis of modern efficiency, the local educational emterprise long ago should have collapsed and some more vigorous system been established.
>
> What ever we call that quality - ideal nature, perfectibility of man's estate - it runs counter to statistical table, figures, computers and bureaucrats; it goes beyond bare, minimal qualifications. And it seems to have worked well.

In the long run, perhaps the absence of specific qualifications required by states is the very reason for this healthy growth.

Superintendents

Authors of literature concerning the relationship of innovativeness of the chief administrator attributable to common personal characteristics present a varied pattern of responses. Spencer (63, 2965-A), Heisler (26, 2925-A), and Ramer (54, 783-A) reported the educational level of the superintendent to be a significant factor in predicting the degree of innovativeness, while Mims (45) reported educational level of the superintendent to be not significant. The age of the chief administrator was reported as negatively significant by Carlson (13, p. 65), Rogers, in Carlson et al. (14, pp. 58-59), Galgoci (21, 4415-A), Roosa (58, 3397-A), and Ramer (54); Mims (45), Hilfiker (29, p. 102), and Breivogel (6, 1643-A) reported age not to be a significant difference. Mims (45) and Breivogel (6) also reported no significant difference in superintendents of larger districts and the degree of innovativeness - a factor found to be significantly different by both Lawrence (38, 1937-A) and Ramer (54). The salary of the superintendent was found to be a significant factor in predicting the innovativeness by both Spencer (63) and Breivogel (6). A negative significant difference between the superintendent's tenure and his innovativeness was reported by both Ramer (54) and Reynold (56, p. 3). The question of whether a chief administrator recruited from within or outside the district was more innovative was explored by Galgoci (21) and Ramer (54) with Galgoci (21) supporting recruitment from outside the school to produce a more innovative superintendent, and Ramer (54) concluded this factor did not contribute significantly.

Principals

Few studies have been conducted specifically about the personal characteristics of the principal and their relationships to the principal's attested innovativeness. Some authors displayed the propensity to group superintendents and principals together under the headings of "administrators" or "innovators". Pratton (52, 4201-A) found the age of the principal to be negatively significantly related to innovativeness, and that the innovative principal received a significantly higher social status among his peers. Craigo (17, 3805-A), however, found neither age nor years of experience to be significantly different. Craigo and Peach (50, 104-A) both concurred that the educational level obtained by the principal was a significant factor contributing to his innovativeness. Peach also reported a negatively significant relationship between the innovativeness of the principal and his tenure in his present position, while Hinman (32, p. 13) indicated tenure was not significantly related to innovation.

Innovators in general

Rogers, in Carlson et al. (14, pp. 58-59) reported the following generalizations would appear to describe innovators:

1. Young.
2. Relatively high social status, in terms of the amount of education, prestige ratings, and income.
3. Impersonal and cosmopolite sources of information are important to innovators.
4. Innovators themselves are cosmopolite.
5. Innovators exert opinion leadership.
6. Innovators are likely to be viewed as deviants by their peers and by themselves.

Skogberg (62, p. 415) presented the following characteristics

of the adaptable administrator:

1. They view the entire system as a team working on a common problem.
2. They tend to view lay people as team members or potential members.
3. They are not jealous of power.
4. They delegate responsibility and authority freely to those who can or will try to do the job at hand.
5. They are willing to learn from co-workers.
6. They are vigorous, highly-trained, self-critical men.
7. They give others the impression of personal integrity and professional competence.

In a pamphlet co-authored with Carlson, Gallager, Miles, and Pellegrin, Rogers (14, pp. 57-58) summarized the innovator thusly:

> Innovators are venturesome individuals; they desire the hazardous, the rash, the avant-garde, and the risky. Since no other model of the innovation exists in the social system, they must also have the ability to understand and use complex technical information. An occasional debacle when one of the new ideas adopted proves to be unsuccessful does not disquiet innovators. However, in order to absorb the loss of an unprofitable innovation, they must generally have control of substantial resources.
>
> Their propensity to venturesomeness brings them out of their local circle of peers and into more cosmopolite social relationships. Even when the geographical distance between them may be considerable, they often have been found to form cliques. They spread new ideas as their gospel.
>
> The description of innovators is sharpened by contrasts to that of laggards, who are the last to adopt an innovation. Laggards are localistic; many are near-isolates. Their point of reference is the past, and they interact primarily with those peers who have traditional values like theirs. Laggards tend to be frankly suspicious of innovations, innovators, and change agents. When laggards finally adopt an innovation, it may already be superseded by another more recent idea which the innovators already are using. While innovators look to the road of change ahead, the laggards gaze at the rear-view mirror.

Andrew Halpin (25, p. 82) cautions that the term "leadership" has incorporated into it both descriptive and evaluative components and have "burdened this single word (and the concept it represents)

with two connotations: one refers to a role and the behavior of a person in this role, and the other is an evaluation of the individual's performance in the role." Halpin suggested that Sanford (60, p. 51) aptly summarized the situation:

> From all these studies of the leader we can conclude with reasonable certainty, that: (a) there are either no general leadership traits or, if they do exist, they are not to be described in any of our familiar psychological or common-sense terms, (b) in a specific situation, leaders do have traits which set them apart from followers, but what traits set what leaders apart from what followers will vary from situation to situation.

Organizational Climate

Authors have frequently pursued studies dealing with the teacher's "satisfaction", "morale", "annoyances", "pressures", "hindrances", "opinions", "esprit", etc., and the relationships between these variables and a successful teaching climate. Human relationships have received scant attention in the field of education until recent years. Hughes (33, p. 15) stated the problem as follows:

> . . . all study and investigation in a field involving social phenomena must proceed in the face of certain difficulties. The nature of the educational organization presents an additional difficulty when research which bears upon human relations is commenced. Much of the research in personal relations in educational organizations must be action research. Action research has certain limitations. By its very nature it tends to be less scientific than pure research.

Hilfiker quoted Andrew Halpin (25, p. 131) as he pointed out the effect of climate in a school setting:

> Anyone who visits more than a few schools notes quickly how schools differ from each other in their "feel". In one school the teachers and the principals are zestful and exude confidence in what they are doing . . . In a second school the brooding discontent of the

> teachers is palpable; the principal tried to hide his incompetence and his lack of a sense of direction behind a cloak of authority . . . A third school is marked by neither joy nor despair, but by hollow ritual . . . And so, too, as one moves to other schools, one finds that each appears to have a "personality" of its own . . . It is this "personality" that we describe there as the "Organizational Climate" of the school. Analogously, personality is to the individual what Organizational Climate is to the organization.

Halpin was generally dissatisfied with the attempts of sociologists to measure "morale" and with the "sloppy way in which this concept had been used in typical studies of schools and school systems." In an attempt to accurately define and measure the organizational climate in general enough terms so that the instrument could be used in other settings outside education, Halpin collaborated with Don B. Croft to create the Organizational Climate Description Questionnaire (OCDQ). The original questionnaire contained 1000 items when it was first published in 1963. Halpin, through the use of item factor analysis, reduced the instrument to 64 discriminatory questions which he organized into two major categories - group and leader responses - and sub-divided each major area into four sub-sets:

Teachers Responses	Principals Responses
1. Disengagement	1. Aloofness
2. Hindrance	2. Production Emphasis
3. Esprit	3. Thrust
4. Intimacy	4. Consideration

Because of the relevancy to this study, a detailed description of the teachers' response categories follows:

> Disengagement refers to the teachers' tendency to be "not with it". This dimension describes a group which is "going through the motions," a group that is "not in gear" with respect to the task at hand. It corresponds to the more general concept of anomie as first described by Durkheim. In short, this subtest focuses upon the teachers; behavior in a task-oriented situation.

Hindrance refers to the teachers' feeling that the principal burdens them with routine duties, committee demands, and other requirements which the teachers construe as unnecessary "busy-work". The teachers perceive that the principal is hindering rather than facilitating their work.

Esprit refers to morale. The teachers feel that their social needs are being satisfied, and that they are, at the same time, enjoying a sense of accomplishment in their job.

Intimacy refers to the teachers; enjoyment of friendly social relations with each other. This dimension describes a social-needs satisfaction which is not necessarily associated with task-accomplishment.

Halpin defined a continuum of climates to describe various degrees thusly: Open, Autonomous, Controlled, Familiar, Paternal, and Closed. He attributed "good" or positive conditions to the open climate and "bad" or negative connotations to the closed climate.

A number of studies have used the OCDQ to test organizational climates against innovative and non-innovative schools. Hilfiker (29, p. 100), Marcum (42, 2932-A), Hughes (34, 73-A), Hillman (30, 3816-A) and Clark (15, 2902-A) all found a significant relationship between open climates and innovative schools. Roosa (58, 3397-A), however, failed to show a significant difference between openness and the rate of adoption for innovations, and Wilkes (74, 3265-A) found no significant difference between open climate and the number of innovations in a school. Wilkes recommended that further study be made to determine correlation between the adoption of innovation and the delineation of the factors of impetus for the adoption of innovations in educational settings. Hilfiker further found significant relationships between innovative schools and powerlessness (negative and with

principals only), thrust, and social support. He found no significant difference between adaptiveness of the climate and the innovativeness of the school. Upon determining the openness of a school's climate, Marcum (42, 2932-A) found significant relations to open climate and the number of staff in the school, that the age of the staff was less in open climate schools, that professional staff tenure was smaller in open climate schools, and that administrators viewed the climate as more open than did the teachers.

Hillman (30, 3816-A) showed a strong coexistence between salaries paid to the principals and the amount of innovation occurring in the school. He also noted that the "consistency of more open climates in the smaller schools seem to indicate that the principal-teacher communication and subsequent relationship was better in the smaller schools, but that because of insufficient personnel great amounts of innovation were not taking place."

Peach (50, 104-A), testing factors in the role of the principal and the adoption of innovative instructional procedures, stated: "Qualities of interpersonal relationships, leadership styles, and the extent to which personal, social, and organizational goals are attained were found to have little relationship with program adaptability. The theoretically determined concept of "openness of the system" was not substantiated as a factor contributing to adaptability." However, Peach only surveyed 35 schools, their principals and teachers, in but four Washington school districts. The limited scope of his sample left the reported findings in doubt.

Attitudes and Criticisms

The definition of attitudes and opinions, and their relationship to one another, has been expressed frequently in the literature. Guilford (24, pp. 456-457) defined an attitude as "a personal disposition common to individuals, but possessed to different degrees, which impels them to react to objects, situations, or propositions in ways that can be called favorable or unfavorable. Brown (8, p. 55) differentiates between opinions and attitudes when he stated:

> Opinions are but briefly held and likely to reflect current public feeling; in many cases they reflect rather what the individual thinks he should feel than what, in fact, he does feel. They are readily changed and may be susceptible either to propaganda or reasoned argument. Attitudes, on the other hand, are likely to be long lived and do not necessarily reflect those of some group with which the individual has become associated.

Thurstone (66, p. 531) saw more congruency between attitudes and opinions: "Opinion is the verbal expression of attitude. Actually, then, an opinion is a symbol of an attitude. Opinions may be used as the means for measuring attitudes." Robinson (57, p. 45) stated: "In simple terminology, an attitude is a concept used to explain what happens between stimulus and response to produce an observed effect." Newcome (48, p. 118) agreed with Robinson's position when he defined attitude as a "tendency of an individual to perform, perceive, think, and feel in relation to something."

Allport, as reported in Fishbein (18, p. 8), concluded that: "Attitude is a learned predisposition to respond to an object in a consistently favorable or unfavorable way . . ." He further stated:

"An attitude is a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related."

A major study was conducted by Robinson (57) in 1968 in which he correlated certain social and economic characteristics of board members in Iowa against their attitudes toward current criticisms of public education. A secondary aspect of Robinson's study was to compare the social and economic characteristics of Iowa school board members with the composition of school boards serving in other areas as reported by similar studies. Robinson's sample was obtained from large, medium, and small school districts by the use of a questionnaire. He received 362 responses from board members representing 102 Iowa school districts for a 64% return. Robinson's questionnaire was divided into two major divisions: 1) personal, social, and economic factors of the board members with the results reported in Table 1 of this study; and 2) critical statements about education to which the respondent was asked to check a Likert-type, five position continuum of strongly agree, agree, undecided, disagree, and strongly disagree. These statements of criticisms were validated by a panel of 25 pre-selected professional educators in all phases of education in the State of Iowa. Robinson then cataloged the criticisms into five areas of interest; school costs, teaching methods and procedures, policy making, curriculum, and teachers.

Robinson made the following observations:

1. Iowa school board members least critical of public education were 40 to 49 years of age, had completed some graduate work, were employed in a professional or technical occupation with an annual income of at least $15,000 (highest classification), and served in a school district with 2900 or more students (largest classification).

2. Tenure was not a significant factor . . . The number of years of service had little influence upon a board member's criticism of public education.

3. Farm operators were in greater agreement with the statements of criticism than board members in the three remaining vocational classifications.

4. There is a negative correlation between the number of years of education obtained by board members and criticisms of education.

5. School size was a highly significant variable . . . when examining the attitudes of board members in the areas of costs, teaching methods and procedures, and policy making. As the student enrollment decreased, greater was the degree of agreement or higher was the mean score achieved by respondents for the statements of criticism.

6. Income was a negatively significant factor for the variable of school costs.

7. Although not significant, there was a discernible relationship between annual income of board members and their criticism of teaching methods and procedures, policy making, curriculum, and teachers.

Knezevich (37, pp. 490-491), in postulating a "law of attack on social institutions", rationalized that "throughout history in almost every country at any period of time, the social institutions responsible for education of children and youth have been prime targets during periods of social upheaval. This viewpoint has predictive value, because one can almost predict that schools will be criticized when difficult times are being experienced. The waxing and waning of criticism of public education will follow a cycle indicating periods of

unrest." Robinson (57, p. 30) further validated the "law of attack upon social institutions" when he noted the negative reaction of the American people to education after the launching of Sputnik I, on October 3, 1957. While he felt that much of the criticism leveled at education has resulted from a "sincere concern and interest in the welfare of American youth", he also noted that the list of critics are as varied as the criticism themselves. Robinson stated: "The introduction and expansion of new ideas and programs in the past five years (1963-1968) appear to have blunted the dissatisfaction with the nation's public schools." However, since the writing of Robinson's study, American secondary public schools have remained under continued pressure from the voters to both trim costs and lower taxes, and to provide an individualized curriculum to each individual student's needs.

In a study involving 12 school districts in Wisconsin, Manz (41, 4419-A) found a negative relationship between board member's income and their concern over issues confronting the board. Manz also found members in larger districts to be less concerned, and that board members who had children in school tended to be less satisfied with actions taken by the boards. Finally, Manz concluded that board members who had high annual incomes tended to be regarded as "effective" by their fellow board members.

Environmental Press

The concept of environmental press is a relatively recent phenomenon, but its importance to students and teachers, positively and negatively, can scarcely by overemphasized. Edwin L. Herr

(28, pp. 586-598) in 1965 defined press as "the specific attributes of a particular environment in terms of the benefits offered to particular needs or the frustration imposed upon other needs. Press serves (sic) as rewards; they can also be considered punishments or harms as the individual perception reverses or as the press presented changes." Tolsma (68, p. 9) used press to be synonymous with environment and environmental press. Three types of press was presented by Tolsma:

1. Alpha Press - the press which actually exists.
2. Beta Press - the environmental press as perceived by the individual, i.e., the individual's phenomenological world.
3. Consensual Beta Press - while the beta press is perceived by the individual a group of individuals may have similar perceptions. When their individual perceptions of the press are mutually shared the press is referred to by Stern, et al. (51, p. 37) as the "consensual beta press".

Tolsma (68, p. 15) reported H. A. Murray labeled the external influences as "press". Murray concurred with Tolsma's Alpha, Beta, and Consensual Beta Press definitions. It is interesting to note that while an individual may not accurately state an attitude or an opinion which would agree with the group consensus or the reality of an Alpha press, his reactions to stimuli received from an environment are real and honest to the individual. Thus, he may state an academically honest opinion about an environment - real or unreal. Only through a comparison of beta press responses can a researcher determine if a beta response is in reality a consensus beta response. Tolsma (68, p. 10) reported Pace (1962) as having stated: "Whether their definition is

distorted or real is immaterial for their definition of the environment becomes real in its consequences."

Although a number of instruments have been developed to measure environmental press on the higher education level, until this year only the High School Characteristic Index (HSCI), developed by George Stern (65, 1964), has been developed to test the environmental press present on the high school level. Although well-conceived and constructed, the HSCI has proven to be an unwieldy instrument (300 items) which Stern used to describe thirty separate traits or climates. Also, in recent years, the HSCI has come under increasing criticism because of lack of discriminating ability. Menne and Tolsma (44, p. 6) statistically stated the problem:

> The ratio of between to within-group mean squares (MS), under the usual analysis of variance (AOV) assumptions, varies as the F statistic. In the usual AOV terms it could be said that a significant F ratio is the minimum acceptable indication of group differences. The F. statistic or the ratio of between to within MS is not, however, an entirely suitable index of item discrimination, because it is influenced by the size of the sample. Because of this it is quite possible for an item to yield a significant F ratio, i.e., be discriminating in a situation where there are several large groups but not be a discriminating one in a situation involving a few small groups.

In February of 1972, Robert Tolsma and Gordon Hopper, (69, 1972) published the School Environment Assessment Scales (SEAS) which was designed for practical usage in a high school setting by utilizing items suitable to discriminate among the responses of two groups of approximately 50 persons. Through factor item analysis, the original 180 items have been reduced to 90 which then were cataloged into seven sub-divisions: Intellectual Self-Expression; Activity; Hetro-Sexual

Social Expression; Paternalism; School Spirit; Anti-Establishment; and Authoritarianism. The SEAS utilized student completion of statements with selection of responses listed in the following Likert-type classifications:

1.	Almost never	- Almost none	-	0- 20%
2.	Seldom	- A few	-	20- 40%
3.	Occasionally	- About half	-	40- 60%
4.	Frequently	- Many	-	60- 80%
5.	Consistently	- Almost always	-	80-100%

Tolsma and Hopper (69, p. 25) reported that the items included in the SEAS were "required to meet two selections criteria. First, they must measure an aspect of the environmental press better than the effects of personality or personality-environment interaction. Second, they have to meet the practical research criterion of being able to distinguish differences between two groups of forty-five persons each." Tolsma (68, p. 3) further gave two major reasons "which necessitated the exploration of secondary school environment. They are first, to determine in which ways the characteristics of the environment influence academic achievement, and second, to ascertain the relationships between the environmental pressures perceived by the students and the manner by which they react to these pressures."

METHODS AND PROCEDURES

Introduction

The thesis basic to this study was that the personal and vocational attributes of the administrative change team, consisting of members of the Board of Education, the Superintendent, and the Building Principal, and the manner in which they perceive the educational process, contributes to a readiness and willingness to initiate massive educational change. The problem was the determination of those characteristics and attitudes displayed by the administrative change team who have authorized and committed their district's resources to a massive change in the initiation of the Stanford School Scheduling System which are significantly different from their counterparts in similar school districts who have not initiated SSSS. Specific areas investigated were the administrative change team's personal characteristics, their perception of their school's organizational climate, their attitudes displayed toward certain criticisms of public secondary education, and their perception of their school's environmental press.

In this chapter the methods and procedures used to collect the data relevant to this study are discussed. The chapter is organized into the following sections: selection of the study schools, development of the questionnaire, collection of the data, and analysis procedures.

Selection of Study Schools

The inclusion of schools was delimited to selected midwest public secondary schools that had initiated SSSS scheduling within the past five years, and that are presently so scheduled. The control schools were selected to match the SSSS schools in terms of school district enrollment, geography, apparent wealth, proximity to large cities and universities, and the grade level organization of the district, i.e., 6-3-3 or 6-2-4, etc. The identification of potential study schools was received through the cooperation of the following computer scheduling organizations:

1. Westinghouse Learning Corporation; Iowa City, Iowa
2. Iowa Education Information Center; Iowa City, Iowa
3. Central Education Service; Portage, Wisconsin

Because of the competitive nature of computer scheduling, complete anonymity concerning the identification of the individual schools was guaranteed. The geographic distribution of the "change" schools, i.e., schools that have initiated SSSS, that were available for study was as follows:

States	Schools Available
Iowa	21
Illinois	6
Indiana	3
Minnesota	8
Michigan	1
Nebraska	3
Ohio	1
Oklahoma	1
Wisconsin	27
Total	71

Mean of school size = 862

To guarantee representation of a continuum of school size in the selected sample of schools, the potential study schools were arranged according to ascending school population size, grouped into eight groups, and assigned a stratification selection number which gave a total of 30 schools to be selected. Display of this procedure follows:

Class Size	Frequency	Stratification
100 - 199	1	3
200 - 299	5	
300 - 399	8	4
400 - 499	9	4
500 - 599	4	4
600 - 699	8	
700 - 799	4	4
800 - 899	5	
900 - 999	1	
1000 - 1099	11	4
1100 - 1199	1	4
1200 - 1299		
1300 - 1399	1	
1400 - 1499		
1500 - 1599	2	
1600 - 1699	3	
1700 - 1799	3	
1800 - 1899	2	3
1900 - 1999		
2000 - 2099	2	
2100 - 2199		
2200 - 2299		
2300 - 2399	1	

The following criteria was followed in the actual selection of the sample study schools:

1. Random selection utilizing the random numbers technique was used throughout each stratified level.

2. A school not wishing to participate in the study was replaced by another school in that stratified level until all available schools were exhausted. At that time, the stratified level was considered to be complete.

3. Control schools were then arbitrarily selected primarily by using the criteria of geographic considerations and school district population similar to the change schools.

4. The inability to match a change school with a control school within reasonable tolerance resulted in the rejection of the change school and its replacement with another selection.

Upon completion of the selection of study schools, the superintendent of each school district was telephoned to explain the nature of the study, and to secure his cooperation in identifying the members of the administrative change team who represented his district at the time the decision to initiate SSSS was made. They were asked to complete the form presented in Appendix A on which they listed the names and home addresses of the administrative change team of their district. Only three of the originally selected schools optioned not to participate in the study.

A total of 49 school districts were included in this study - 24 paired change-control schools and one additional change school. The control school of the additional change school reversed its decision to participate at a time when returns were already being received from the change school. Because of the nature of the additional change school, no other control school was suitable as its pair. Consequently, the decision to include the change school as an unpaired entity was made. The distribution of respondents included in the study were:

Change Schools		Control Schools	
Board Members	156	Board Members	144
Superintendents	25	Superintendents	24
Principals	25	Principals	24
	206		192

The total number of respondents possible in this study was 398.

Because of the regional nature of this study, no attempt was made to maintain any balance of the schools selected to the original population in respect to statehood location. The final distribution by states of the study schools was as follows:

Illinois	2
Indiana	2
Iowa	24
Minnesota	8
Wisconsin	13
Total	49

Development of the Questionnaire

The questionnaire used in the collection of data was divided into four sections (see Appendix B). The first section was used to collect information concerning the respondent's personal characteristics. The selected characteristics were: age, sex, number of children, number of children in school (K-12), marital status, number of years of formal education completed, highest degree obtained, income, occupation, tenure, political affiliation, major ancestorial background, and religious affiliation. These criteria were selected to allow comparison to other studies that have collected similar information concerning personal characteristics of board members, and to lay a foundation for future comparisons of personal characteristics of superintendents and principals.

The second part of the questionnaire collected responses concerning the organizational climate of the survey school as perceived by members of the administrative change team. The OCDQ sub-sets Hindrance, Disengagement, Esprit, and Intimacy were selected both because

of their relevancy to this study, and the anticipated ability of board members to be able to express their attitudes to these questions. Because of the number of questions involved, six representative questions were selected from each of the four sub-sets. Although the five point Likert-type response selection would have been preferred, the four selection continuum of rarely occurs, sometimes occurs, often occurs, and very frequently occurs, that was used in the original OCDQ was utilized.

Part three of the questionnaire quizzed the respondents about their attitudes toward selected criticisms of secondary education. Representative questions were selected from each of the five classifications of criticisms used in the Robinson study; school costs, teaching methods, policy making, curriculum, and teachers. By utilizing this approach, not only was information collected to determine significant differences between members of the change and control schools, but an in-time comparison was made possible through comparison of results achieved by Robinson, and the use of identical criteria will make analysis of trends possible in future studies.

Finally, part four sought opinions concerning the environmental press of the survey school as perceived by the administrative change team. The three most discriminatory items, as determined through factor analysis, of each of the seven categories of the SEAS was utilized. Those categories were: intellectual self-expression, activity, heterosexual social expression, paternalism, school spirit, anti-establishment, and authoritarianism. Although the SEAS was developed

primarily as a student-oriented instrument, the questions were considered to be developed in a manner which allowed administrators and board members to express their opinions accurately about the perceived environmental press of the survey school. Respondents were asked to express their opinions within the following continuum:

1.	Almost never	- Almost none	- 0 - 20%
2.	Seldom	- A few	- 20 - 40%
3.	Occasionally	- About half	- 40 - 60%
4.	Frequently	- Many	- 60 - 80%
5.	Constantly	- Almost always	- 80 - 100%

Once again, the utilization of identical items allows comparison of responses not only between the change and control schools of this study, but also against the established norms for the SEAS.

Collection of the Data

A mailed questionnaire was utilized as the most effective, efficient, and economical means of collecting data from 398 respondents in a five state area. Commencing on April 14, 1972, a questionnaire, along with a cover letter (see Appendix C) and a self-addressed stamped envelope, was sent to each respondent in a school district within a week after receiving the names and addresses from the superintendent of that study school district. In this manner, the questionnaires were received in a school district while the study was still fresh in the mind of the superintendent and he could answer any questions that other respondents might pose to him. The final group of questionnaires were mailed to the last school district on May 24, 1972. As a reply was received, a notation of receival was made on the list of

respondents of that district. After four weeks had elapsed since the original mailing, a second questionnaire, along with a follow-up letter (see Appendix C) and a self-addressed stamped envelope, was sent to all those who hadn't responded asking them again to participate. In both the original and follow-up letter the fact was stressed that this study was utilizing an in-time approach and that they as individuals could not be replaced by any other person. The confidentiality of their replies was also stressed. In four cases the superintendent volunteered to assist in the distribution of the questionnaires by having them sent directly to him for distribution to the change team in his district. In all cases this was done. However, all follow-up letters and questionnaires were sent directly to the respondent's home address.

Each questionnaire was hand-coded with the following items for inclusion in the data: the respondent's position on the administrative change team; i.e., board member, superintendent, or principal; whether the respondent was from a change or a control district; and the relative size of the respondent's district school enrollment (small = up to 1,500, medium = 1,500 to 2,999, and large = 3,000 and over).

Analysis Procedures

The data collected from the questionnaires were coded and reduced to the computer-acceptable language required by the Statistical Package for Social Sciences (49). This program was selected because of the ease in which the comparisons desired in this study could be programmed and calculated. To effectively test the hypotheses, the questionnaire

responses were divided according to board member, superintendent, and building principal categories and then further divided into classifications of change and control groups.

The statistical significance of difference between the mean responses of similar groups was tested by utilizing the pooled t-test as presented by Freund (20, pp. 254-257). This model utilizes the additive qualities of small-sample numbers and is based upon the assumption that there is no difference between the sample means, or that $\bar{x}_1 = \bar{x}_2$. Unequal numbers are readily accepted in this test of significance. The model is as follows:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{\sum (x_1 - \bar{x}_1)^2 + \sum (x_2 - \bar{x}_2)^2}{n_1 + n_2 - 2} \cdot \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

where: $\bar{x}_1$ = mean of change school responses

$\bar{x}_2$ = mean of control school responses

n_1 = number of respondents in the change group

n_2 = number of respondents in the control group

$\sum (x_1 - \bar{x}_1)^2$ = sum of the squared deviations from the change group mean

$\sum (x_2 - \bar{x}_2)^2$ = sum of the squared deviations from the control group mean

Since normal distributions with equal variances were assumed in the pooled t-test model, the substitutions of $(x_1 - \bar{x}_1)^2 = (n_1 - 1)s^2$ and $(x_2 - \bar{x}_2)^2 = (n_2 - 1)s^2$ were used when standard deviations

had previously been calculated from the data.

The social and personal data collected in part 1 of the questionnaire were treated with descriptive statistics. This technique allowed comparison to previous studies concerning board members, and formed a basis on which future studies may be based concerning the superintendents and principals. In parts 2, 3, and 4, the respondents were asked to circle the number corresponding to their selected answer. The responses to each of the questions pertaining to the four sub-sets of part 2, five sub-sets of part 3, and seven sub-sets of part 4, were summed and a mean response for each sub-set was calculated. A pooled t-test between the mean responses of similar groups was then applied to each of the sub-sets in regard to the hypothesis.

When a significant difference was calculated to exist in the responses to a given sub-set, a pooled t-test was applied to the mean responses for similar groups for each question comprising the sub-set to determine the amount of difference contributed by each question.

In all cases, the difference between means was tested at the 0.05 level of significance with the 0.001 level of significance also reported. Although the 0.10 level of signficance was reported as meriting future study, it was not considered significantly different to warrant the rejection of a null hypothesis.

DISPLAY OF DATA

Study Sample

The responses to this study were collected from a total of 325 respondents from a total sample of 398 board members, superintendents, and principals from a five-state area, representing a return of 81.6 percent. An examination of Table 2 indicates a remarkable similarity in the percent of returns received from the change and control schools in each of the change team classifications. As expected, the percentage of returns were higher among the principals and superintendents than among the lay board members.

All questionnaires received from both the principal and superintendent groups were usable and were included in the study. Thirteen returns received from board members were not included: five returns were received too late for their inclusion into the calculations and eight individuals did not choose to participate. Some of the reasons for nonparticipation were: 1) they no longer lived in the district or they were not presently serving on the board; 2) they felt they did not have the knowledge requested about the survey school; 3) they felt the questionnaire was too involved and difficult; 4) they felt this method of collecting data was of little or no use; and 5) they felt this questionnaire was tantamount to an invasion of privacy.

Table 2. Number and percent of replies received from board members, superintendents, and building principals of change and control schools.

	Change schools			Control schools		
	Total	Return	Percent	Total	Return	Percent
Superintendents						
Iowa	12	11	91.7	12	12	100.0
Minnesota	4	3	75.0	4	3	75.0
Wisconsin	7	7	100.0	6	5	83.3
Indiana	1	1	100.0	1	0	0.0
Illinois	1	1	100.0	1	1	100.0
Total	25	23	92.0	24	21	87.5
Principals						
Iowa	12	12	100.0	12	11	91.7
Minnesota	4	4	100.0	4	4	100.0
Wisconsin	7	6	85.7	6	6	100.0
Indiana	1	0	0.0	1	1	100.0
Illinois	1	1	100.0	1	1	100.0
Total	25	23	92.0	24	23	95.8
Board members						
Iowa	68	56	82.4	65	47	72.3
Minnesota	25	19	76.0	25	21	84.0
Wisconsin	51	45	88.3	43	34	79.1
Indiana	5	2	40.0	4	2	50.0
Illinois	7	6	85.7	7	3	42.9
Total	156	126	80.8	144	107	74.3
Composite totals	206	174	84.4	194	150	77.3
Study totals	398	325	81.6			

Personal Characteristics

Part 1 of the questionnaire collected data relative to the personal and physical characteristics of the administrative change team members. The characteristics included: age, sex, number of children, number of children in school, marital status, years of education, degree, income, tenure, political party affiliation, ancestral background, and religion.

Board members

Age of board members A frequency distribution of the board members' ages was presented in Table 3. Although the range of ages of control school board members was 10 years more than the change board members' range, the mean ages were similar with 47.621 years reported for control board members and 48.273 years for the board members from change schools. The difference between the means for age was not significant. The means did represent an increase in years over the more recent studies of board characteristics, however, with Robinson reporting a board average age of 45.2 years and Tiedt a mean of 43.0 years.

Sex of board members The composition of the school boards in regard to the physical characteristic sex was identical for both change and control schools. Each group reported a 91.7 percent male and 8.3 percent female composition. The male-female ratio was very similar to other studies on school boards, and this ratio has remained stable throughout the years. The sex characteristic data was reported in Table 4.

Table 3. Descriptive data of responses by board members concerning the personal characteristic Age

	Change schools		Control schools	
Years	N	Percentage	N	Percentage
to 30	-	-	1	1.1
30 - 39	16	13.2	13	13.6
40 - 49	54	44.7	42	44.2
50 - 59	42	34.7	34	35.8
60 - 69	9	7.4	4	4.2
70 - 79	-	-	1	1.1
Total	121	100.0	95	100.0
Range	Change = 32 to 66 = 34 years		Control = 27 to 71 = 44 years	
Mean	= 48.273		= 47.621	
Std dev	= 7.482		= 8.072	

t-test value = 0.6155

Table 4. Descriptive data of responses by board members concerning the personal characteristic Sex

	Change schools		Control schools	
Sex	N	Percentage	N	Percentage
Males	111	91.7	88	91.7
Females	10	8.3	8	8.3
Total	121	100.0	96	100.0

Number of children of board members A difference, albeit not significant, was noted in the number of children reported by board members and recorded in Table 5. The board members from change schools recorded a lower mean of 3.700 children as compared to 4.011 children of control school board members. The pooled t-test value of the mean difference was a negative 1.4809. Another interesting aspect of this comparison was the fact that all respondents reported at least one child. This appeared to be a well-defined common characteristic of all board members.

Table 5. Descriptive data of responses by board members concerning the personal characteristic Number of Children

	Change schools		Control schools	
Children	N	Percentage	N	Percentage
1.00	4	3.3	2	2.1
2.00	18	15.0	13	13.7
3.00	34	28.3	26	27.4
4.00	39	32.5	24	25.3
5.00	13	10.8	14	14.7
6.00	5	4.2	9	9.5
7.00	6	5.0	3	3.2
8.00	0	0.0	3	3.2
9.00	1	0.8	0	0.0
10.00	0	0.0	1	1.1
Total	120	100.0	95	100.0
Mean	Change = 3.700		Control = 4.011	
Std dev	= 1.430		= 1.653	
t-test value = (-1.4809)				

Number of board members' children in school The figures presented in Table 6 indicated that approximately one-fourth of the board members in both change and control schools do not currently have children in school. Both groups reported similar means with 1.839 children in school reported by board members in change schools and 2.021 children in school reported by board members in control schools. There was no significant difference between the means.

Table 6. Descriptive data of responses by board members concerning the personal characteristic Number of Children in School

	Change schools		Control schools	
Children	N	Percentage	N	Percentage
0.00	34	28.9	23	24.5
1.00	19	16.1	17	18.1
2.00	28	23.7	18	19.1
3.00	19	16.1	19	20.2
4.00	12	10.2	9	9.6
5.00	3	2.6	5	5.3
6.00	1	0.8	2	2.1
7.00	1	0.8	1	1.1
8.00	1	0.8	0	0.0
Total	118	100.0	94	100.0
Mean	Change = 1.839		Control = 2.021	
Std dev	= 1.660		= 1.691	

t-test value = (-0.1324)

Marital status of board members Marriage was constantly reported by both change and control school board members with all but three of the 215 respondents reported being married, and two of the remaining three had been married in the past. 97.5 percent of the change board members and 100.0 percent of the control board members were reported in Table 7 as being married.

Table 7. Descriptive data of responses by board members concerning the personal characteristic Marital Status

	Change schools		Control schools	
Status	N	Percentage	N	Percentage
Single	1	0.8	0	0.0
Married	117	97.5	95	100.0
Divorced	1	0.8	0	0.0
Separated	1	0.8	0	0.0
Widowed	0	0.0	0	0.0
Total	120	100.0	95	100.0

Years of education of board members The number of years of education for board members continued to increase over previous studies. While Robinson reported an average of 14.00 years education for board members in Iowa, both the change group with 14.264 years and the control group with 14.177 exceeded Robinson's findings. The number of high school graduates was reported in Table 8 as being 93.2 percent for the change school board members and just slightly less at 92.8

Table 8. Descriptive data of responses by board members concerning the personal characteristic Years of Education

Years	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
8.00	3	2.5	3	3.1
9.00	3	2.5	0	0.0
10.00	2	1.7	0	0.0
11.00	0	0.0	0	0.0
12.00	37	30.6	35	36.7
13.00	11	9.1	4	4.2
14.00	11	9.1	7	7.5
15.00	6	5.0	4	4.2
16.00	22	18.2	26	27.3
17.00	10	8.3	7	7.5
18.00	8	6.6	3	3.1
19.00	3	2.5	2	2.1
20.00	4	3.3	4	4.2
21.00	1	0.8	0	0.0
Total	121	100.0	95	100.0
Mean	Change = 14.264		Control = 14.177	
Std dev	= 2.807		= 3.005	
t-test value = 1.1546				

percent for the control school board members. These figures were within one percent of Robinson's reported percentage of 93.37. The number of college graduates on boards of education were very similar between the change and control groups, with 39.8 percent reported for the change board members and 41.2 percent for the control group. Both of these totals are considerably higher than the 30.0 percent college graduates reported in the N E A Research Division study in 1946.

Degrees earned by board members Analysis of the data concerning degrees earned by control or change group board members and presented in Table 9 showed no significant difference between the two groups. In reality, there is a remarkable similarity of responses to all degree levels between the two groups.

Table 9. Descriptive data of responses by board members concerning the personal characteristic Degree

Degrees	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
No degree	8	6.8	7	7.2
High school	63	53.4	50	51.5
Bachelors	33	28.0	29	29.9
Masters	6	5.1	5	5.2
Specialist	1	0.8	0	0.0
Doctorate-Lawyer	7	5.8	6	6.2
Total	118	100.0	97	100.0

Income of board members The income data collected from board members was displayed in Table 10. The similarity between the two groups again was apparent. The change group board members indicated an average annual income of $18,740 compared to $19,295 reported by the control group. Both these figures are substantially higher than the latest - and previously highest - reported board income figure of

$11,999 by Robinson in 1968. There was no significant difference reported between the change and control groups considering the variable income.

Table 10. Descriptive data of responses by board members concerning the personal characteristic Income

Income	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
Below $5000	2	1.7	2	2.2
$5000 - 9999	18	15.5	15	16.3
10000 - 14999	26	22.5	22	23.9
15000 - 19999	29	25.0	18	19.6
20000 - 24999	14	12.1	12	13.0
25000 - 29999	9	7.8	5	5.4
30000 - 34999	3	2.6	3	3.3
Above $35000	15	12.9	15	16.3
Total	116	100.0	92	100.0
Mean	Change = 4.248 or $18,740		Control = 4.359 or $19,295	
Std dev	= 1.952		= 2.063	
t-test value = (-0.3992)				

Tenure of board members Tenure of board members was displayed in Table 11. The reported number of years service by change school board members was 8.372 while the control board members reported 8.234 years. The t-test value between these means was 0.9893 and, therefore, not significant. However, both means are more than three years or approximately 60% more than the value reported by Robinson (5.18 years) and much greater than reported by Tiedt (4.7 years) in 1962. Both of

Table 11. Descriptive data of responses by board members concerning the personal characteristic Tenure

Tenure	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
1 - 5	45	37.2	36	38.2
6 - 10	46	38.1	34	36.1
11 - 15	17	14.1	16	17.0
16 - 20	7	5.8	3	3.2
21 - 25	4	3.3	4	4.4
26 - 30	1	0.8	0	0.0
31 - 35	1	0.8	0	0.0
36 - 40	0	0.0	1	1.1
Total	121	100.0	94	100.0
Mean	Change = 8.372		Control = 8.234	
Std dev	= 5.908		= 6.269	
t-test value = 0.9893				

these reports represented an increase in tenure during the time of their study; the trend toward longer tenure on the boards of both change and control schools apparently has continued. The reported increase in the average age of board members in this study (Table 3) of nearly three years over other studies would tend to confirm this trend toward longer tenure. Board members were entering board service at the same age as their predecessors, but officiating longer.

Political affiliations of board members Political affiliations of board members, reported in Table 12, were less firmly committed than reported in previous studies. Both change and control group board members reported a preference for the Republican party over the Democratic party by a three-to-one ratio. Commitments were more pronounced within the change group with a higher percent of respondents stipulating both major parties, while more control group board members professed to be independent in their political views.

Table 12. Descriptive data of responses by board members concerning the personal characteristic Political Party

	Change schools		Control schools	
Party	N	Percentage	N	Percentage
Democrat	23	19.0	14	14.0
Republican	73	60.3	52	55.3
No Party	24	19.8	26	27.7
Other	1	0.8	2	2.1
Total	121	100.0	94	100.0

Ancestral background of board members The birth origin of the board members or their ancestors was explored and the data was presented in Table 13. The respondent was asked to list his family background. The responses were grouped into the following classifications: 1) Scandinavian countries; 2) Middle Europe countries; 3) England; and 4) others. Only one response (Greek) was not contained in the first three classifications. If a respondent indicated a mixed heritage, i.e. French-Irish, the response was placed in the classification for the country indicated first. The example, then, was included with the Middle Europe responses. The preponderance of German responses was not unexpected because of the high German influence in the states included in this study. Perusal of the data indicates that while both change and control board members have Middle Europe ancestry in more than one-half of their members, the control board members tend to have more Scandinavian ancestry while change board members tend to have more of the English influence in their ancestry. If one were to assign a weight of 1.00 to Scandinavian responses, 2.00 to Middle Europe responses, and 3.00 to England responses, and assume a geographic continuum, a pooled t-test value of 1.728 - significant at the 0.10 level - would be indicated. Further research in the area of ancestral background for board members might be valuable.

Occupations of board members The frequency distribution of responses by board members as to their occupations was presented in Table 14. The three classifications - 1) Professional and technical, 2) Business and management, and 3) Farm operative - accounted for 86.8

Table 13. Descriptive data of responses by board members concerning the personal characteristic Ancestral Background

Description	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
1.00 - Scandinavian				
Danish	3	2.6	3	3.3
Norwegian	3	2.6	6	6.5
Norwegian-Swedish	2	1.7	-	-
Swedish	5	4.2	6	6.5
Swedish-Dutch	1	0.8	-	-
Total	14	11.9	15	16.3
2.00 - Middle Europe				
	2	1.7	1	1.1
Dutch	2	1.7	8	8.6
Dutch-English	1	0.8	2	2.2
French	2	1.7	-	-
French-Irish	1	0.8	-	-
German	49	41.0	42	45.2
German-Norwegian	2	1.7	-	-
Polish	1	0.8	1	1.1
Swiss	1	0.8	1	1.1
Total	61	51.2	55	59.3
3.00 - England				
English	15	12.5	13	14.0
English-German	4	3.4	3	3.2
English-Irish	2	1.7	1	1.1
Irish	11	9.2	2	2.2
Irish-German	3	2.6	2	2.2
Scotch	3	2.6	1	1.1
Scotch-English	3	2.6	-	-
Scotch-German	1	0.8	-	-
Scotch-Irish	2	1.7	-	-
Total	44	37.1	22	23.8
4.00 - Others				
Greek	-	-	1	1.1
Grand total	119	100.0	93	100.0

percent of the change board members' responses and 79.2 percent of the control school board members' responses. The combination of Professional and technical responses with the Business and management responses accumulated 55.4 percent and 57.3 percent of the change and control board members' replies, respectively. These similar totals correspond

Table 14. Descriptive data of responses by board members concerning the personal characteristic Occupation

	Change schools		Control schools	
Occupations	N	Percentage	N	Percentage
Professional & tech	31	25.6	24	25.0
Bus, mgmt	36	29.8	31	32.3
Clerical & sales	0	0.0	3	3.1
Office worker	0	0.0	2	2.1
Farm operative	38	31.4	21	21.9
Retired	1	0.8	4	4.2
Misc	1	0.8	2	2.1
Skilled worker	4	3.3	1	1.0
Semi-skilled	0	0.0	0	0.0
Unskilled	0	0.0	0	0.0
Unemployed	0	0.0	0	0.0
Housewife	8	6.6	8	8.3
Private income	2	1.7	0	0.0
Total	121	100.0	96	100.0

closely to the reported totals by Robinson (50 percent) and Tiedt (61 percent). Dissimilarity was noted, however, in the classification of Farm operative with the change school board members reported at 31.4 percent and the control school board members reported at only 21.9 percent. Both of these totals are considerably below the Farm operative total reported by Robinson (37.29 percent).

Religious preference of board members A marked similarity was noted concerning religious preference between the change school and control school board members' responses which were displayed in Table 15. The increase of Catholic responses over previous studies was not considered to be unusual because of the high Catholic incidence in the State of Wisconsin.

Table 15. Descriptive data of responses by board members concerning the personal characteristic Religion

Religion	Change schools		Control schools	
	N	Percentage	N	Percentage
Protestant	89	74.2	72	75.8
Catholic	26	21.7	21	22.1
Other	3	2.5	1	1.1
Atheist	2	1.7	1	1.1
Total	120	100.0	95	100.0

Superintendents

Age of superintendents Superintendents of the change school were reported to be nearly the same age as their control school counterparts. The means of 46.429 years and 47.773 years, respectively, were reported in Table 16. The pooled t-test value of a negative 0.5578 showed no significant differences.

Table 16. Descriptive data of responses by superintendents concerning the personal characteristic Age.

	Change schools		Control schools	
Years	N	Percentage	N	Percentage
30 - 39	4	19.0	3	13.7
40 - 49	12	57.2	11	50.0
50 - 59	2	9.5	5	22.6
60 - 69	2	14.3	3	13.6
Total	21	100.0	22	100.0
Mean	Change = 46.429		Control = 47.773	
Std dev	= 8.219		= 7.584	
t-test value = (-0.5578)				

Sex of the superintendents The male dominance of people elected to the chief administrative position in both change and control schools was clearly demonstrated in the responses to this variable. The tabulations in Table 17 indicated that all superintendents of both groups were males. No significant difference was indicated.

Table 17. Descriptive data of responses by superintendents concerning the personal characteristic Sex

Sex	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
Males	22	100.0	22	100.0
Females	-	-	-	-
Total	22	100.0	22	100.0
Mean	Change = 2.000		Control = 2.000	
Std dev	= 0.000		= 0.000	
t-test value = 0.0000				

Number of children of superintendents The data of Table 18 indicated that superintendents' families of change schools averaged one-half less children than their counterparts in control schools. Means of 2.900 children and 3.409 children were reported for change and control superintendents, respectively. Although the pooled t-test failed to indicate a significant difference, a value of a negative 1.1867 was generated.

Number of superintendents' children in school Although the difference decreased, the influence reported in the number of children of superintendents continued in the variable number of children in school. Change superintendents reported 1.700 children in school while control school superintendents reported 1.950 children. The difference between the means was not significant.

Table 18. Descriptive data of responses by superintendents concerning the personal characteristic Number of Children

Children	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
0.0	1	5.0	-	-
1.0	2	10.0	-	-
2.0	4	20.0	8	36.4
3.0	7	35.0	5	22.7
4.0	3	15.0	3	13.6
5.0	3	15.0	4	18.2
6.0	-	-	2	9.1
Total	20	100.0	22	100.0
Mean	Change = 2.900		Control = 3.409	
Std dev	= 1.373		= 1.403	
t-test value = (-1.1867)				

Table 19. Descriptive data of responses by superintendents concerning the personal characteristic Number of Children in School

Children	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
0.0	1	15.0	5	25.0
1.0	2	10.0	3	15.0
2.0	4	20.0	6	30.0
3.0	7	35.0	2	10.0
4.0	3	15.0	3	15.0
5.0	3	15.0	-	-
6.0	-	-	1	5.0
Total	20	100.0	20	100.0
Mean	Change = 1.700		Control = 1.950	
Std dev	= 1.493		= 1.669	
t-test value = (-0.4994)				

Marital status of superintendents While the control school superintendents all reported to be married, Table 20 indicated one change school superintendent remained single and one experienced separation. The remaining 20 superintendents from change schools reported they were married.

Table 20. Descriptive data of responses by superintendents concerning the personal characteristic Marital Status

	Change schools		Control schools	
Status	N	Percentage	N	Percentage
Single	1	4.5	-	-
Married	20	91.0	22	100.0
Separated	1	4.5	-	-
Total	22	100.0	22	100.0

Years of education of superintendents On the average, change school superintendents reported 0.7 years more education than their control school counterparts, with means of 18.512 years and 17.818 years, respectively, reported in Table 21. The pooled t-test of the difference between these means indicated highly significant difference at the 0.05 level.

Degrees earned by superintendents The additional education of change school superintendents translated into more advanced degrees. Assuming a master's degree to be the required minimum in all study states, 11 change school superintendents exceed this minimum (5 specialists and 6 doctorates) while 6 control school superintendents

Table 21. Descriptive data of responses by superintendents concerning the personal characteristic Years of Education

	Change schools		Control schools	
Years	N	Percentage	N	Percentage
16.00	-	-	1	4.5
17.00	2	10.1	7	31.8
18.00	9	42.3	11	50.0
19.00	7	32.9	1	4.5
20.00	3	14.7	2	9.1
Total	21	100.0	22	100.0
Mean	Change = 18.524		Control = 17.818	
Std dev	= 0.908		= 0.958	
t-test value = 2.4798*** = Significant at 0.05 level				

exceeded the minimum (4 specialists and 2 doctorates). By assigning the masters degree 3.00, the specialists degree 4.00, and the doctorate 5.00 on a continuum, the difference between the change school superintendents' mean of 3.810 and the control school superintendents' mean of 3.364 calculated a pooled t-test value of 1.900 which was significant at the 0.10 level.

Income of superintendents The level of income, tabulated in Table 23, showed a high degree of similarity between the change and control groups. Change superintendents reported an average annual income of $22,450, and the control superintendents reported an average annual income of $22,275. There were no statistical significant difference between these reported incomes. It was noted, however, that the

Table 22. Descriptive data of responses by superintendents concerning the personal characteristic Degree

	Change schools		Control schools	
Degree	N	Percentage	N	Percentage
3.00 - Masters	10	47.6	16	72.7
4.00 - Specialist	5	23.8	4	18.2
5.00 - Doctorate	6	28.6	2	9.1
Total	21	100.0	22	100.0
Mean	Change = 3.810		Control = 3.364	
Std dev	= 0.873		= 0.658	

t-test value = 1.900* = Significant at 0.10 level

Table 23. Descriptive data of responses by superintendents concerning the personal characteristic Income

	Change schools		Control schools	
Income	N	Percentage	N	Percentage
$15000 - 19999	7	33.4	4	18.2
20000 - 24999	10	47.6	15	68.2
25000 - 29999	2	9.5	3	13.6
30000 - 34999	2	9.5	-	-
Total	21	100.0	22	100.0
Mean	Change = 4.952 or $22,450		Control = 4.955 or $22,275	
Std dev	= 0.921		= 0.575	

t-test value = (-0.0128)

superintendents' salaries were on the average more than $3,000 more than the board members.

Tenure of superintendents The mean number of years reported in Table 24 for change school superintendents was 6.455 years as compared to 8.364 years reported as the mean of the control school superintendents. Although the control school superintendents have held their positions nearly two years longer than their change counterparts, the t-test value of a negative 0.4776 indicated no statistical significant difference.

Table 24. Descriptive data of responses by superintendents concerning the personal characteristic Tenure

Years	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
1 - 5	12	54.5	7	31.8
6 - 10	6	27.3	8	36.4
11 - 15	3	13.7	6	27.3
16 - 20	1	4.5	-	-
21 - 25	-	-	-	-
26 - 30	-	-	1	4.5
Total	22	100.0	22	100.0
Range	Change = 1.0 to 20.0		Control = 2.0 to 26.0	
Mean	= 6.455		= 8.364	
Std dev	= 4.647		= 5.568	
t-test value = (-0.4776)				

Political affiliations of superintendents The data displayed in Table 25 indicated that the Republican party counted more superintendents as members than the Democratic party by 9 to 2 with change school superintendents and 7 to 4 with control school superintendents. It was noted, however, that with both change and control school superintendents the majority reported no political affiliation. As with their boards of education, the change superintendents tended to be more Republican than the control school superintendents.

Table 25. Descriptive data of responses by superintendents concerning the personal characteristic Political Party

	Change schools		Control schools	
Party	N	Percentage	N	Percentage
Democrat	2	9.7	4	18.2
Republican	9	42.3	7	31.8
No Party	10	48.0	10	45.5
Other	-	-	1	4.5
Total	21	100.0	22	100.0

Ancestral background of superintendents Data concerning the ancestral background of the superintendents or their families was reported in Table 26. The superintendents were asked to list their backgrounds which were then grouped into four classifications: 1) Scandinavian; 2) Middle Europe; 3) England; 4) and Others. There were no responses that could not be grouped into the first three

Table 26. Descriptive data of responses by superintendents concerning the personal characteristic Ancestral Background

Description	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
1.00 - Scandinavian				
Danish	1	4.7	1	4.5
Finnish	-	-	1	4.5
Norwegian	2	9.7	-	-
Swedish	2	9.7	1	4.5
Total	5	24.1	3	13.5
2.00 - Middle Europe				
Czech	-	-	1	4.5
Dutch	-	-	2	9.1
French	-	-	1	4.5
French-German	-	-	2	9.1
German	7	33.4	8	36.7
Total	7	33.4	14	63.9
3.00 - England				
English	6	28.4	1	4.5
English-German	-	-	1	4.5
English-Irish	-	-	-	-
Irish	-	-	3	13.6
Irish-German	1	4.7	-	-
Scotch	1	4.7	-	-
Scotch-Irish	1	4.7	-	-
Total	9	42.5	5	22.6
4.00 - Other	-	-	-	-
Grand total	21	100.0		

classifications. When the superintendent listed a mixed background, i.e. Irish-German, the response was entered into the classification containing the first-mentioned ancestry. The example was entered into the classification England. The control school superintendents reported a majority of their members to have Middle Europe backgrounds (63.9%) while only one-third of change school superintendents claimed that heritage (33.4%). The change school superintendents reported more Scandinavian backgrounds (24.1% to 13.5%) and more England backgrounds (42.5% to 22.6%) than their control school colleagues. However, if one would assign a 1.00 value to Scandinavian, 2.00 value to Middle Europe, and a 3.00 value to England on a geographical continuum, the resulting pooled t-test value for the difference of means would be 0.4651 and be reported as not being significantly different.

Religious preference of superintendents The preferred religious affiliation of the change school superintendents (90.3 percent) and control school superintendents (81.8 percent) was Protestant. No change school superintendents and only 2 control school superintendents representing 9.1 percent favored the Catholic religion. This is somewhat surprising since the Catholic faith is well-represented in the State of Wisconsin. It is possible that the doctrine of separation of church and state may consciously or unconsciously be a factor in the selection of superintendents. However, with 9.3 percent of the superintendents included in this study professing to be atheists, it is possible that religion is not a selection factor at all.

Table 27. Descriptive data of responses by superintendents concerning the personal characteristic Religion

Religion	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
Protestant	19	90.3	18	81.8
Catholic	-	-	2	9.1
Other	-	-	-	-
Atheist	2	9.7	2	9.1
Total	21	100.0	22	100.0

Building principals

Age of building principals The data reported in Table 28 indicated change school principals were nearly three years younger than their control school counterparts with reported means of 41.833 years and 44.652 years, respectively. The difference, however, when tested with a pooled t-test, was reported as a negative 1.1774 which is statistically not significant.

Sex of the building principal The data concerning the sex of the building principal was presented in Table 29. All building principals included in this study were male.

Number of children of building principals The data of Table 30 indicated that the average number of children reported by the change school principals was 3.043 children while the mean for the control group was slightly lower at 2.826 children. The pooled t-test of the

Table 28. Descriptive data of responses by building principals concerning the personal characteristic Age

Years	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
30 - 39	12	50.0	6	26.1
40 - 49	9	37.5	11	47.8
50 - 59	-	-	5	21.8
60 - 69	3	12.5	1	4.3
Total	24	100.0	23	100.0
Range	Change = 31 to 63 = 32		Control = 33 to 60 = 27	
Mean	= 41.833		= 44.652	
Std dev	= 8.484		7.918	

t-test value = (-1.1774)

Table 29. Descriptive data of responses by building principals concerning the personal characteristic Sex

Sex	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
Male	24	100.0	23	100.0
Female	-	-	-	-
Total	24	100.0	23	100.0

difference between the means calculated as 0.5523 for no significant difference.

Table 30. Descriptive data of responses by building principals concerning the personal characteristic Number of Children

	Change schools		Control schools	
Children	N	Percentage	N	Percentage
1.00	-	-	2	8.7
2.00	8	34.8	10	43.5
3.00	11	47.9	6	26.1
4.00	2	8.7	2	8.7
5.00	-	-	2	8.7
6.00	1	4.3	-	-
7.00	1	4.3	1	4.3
Total	23	100.0	23	100.0
Mean	Change = 3.043		Control = 2.826	
Std dev	= 1.261		= 1.403	
t-test value = 0.5523				

Number of principal's children in school Table 31 contained data which indicated that change school principals continued to lead their counterparts slightly with a mean of 1.826 children in school as compared to 1.714 children in school for the control school principals. The pooled t-test (0.1571) showed no significant difference.

Marital status of building principals All change school principals and 22 of 23 control school principals reported they were married. The final principal indicated he was separated. Both groups presented similar characteristics and there was no significant differences detectable.

Table 31. Descriptive data of responses by building principals concerning the personal characteristic Number of Children in School

	Change schools		Control schools	
Children	N	Percentage	N	Percentage
0.0	6	26.1	6	28.6
1.00	3	13.1	3	14.2
2.00	6	26.1	6	28.6
3.00	6	26.1	4	19.0
4.00	1	4.3	1	4.8
5.00	1	4.3	1	4.8
Total	23	100.0	21	100.0
Mean	Change = 1.826		Control = 1.714	
Std dev	= 1.435		= 1.454	

t-test value = 0.1571

Table 32. Descriptive data of responses by building principals concerning the personal characteristic Marital Status

	Change schools		Control schools	
Status	N	Percentage	N	Percentage
Single	-	-	-	-
Married	24	100.0	22	95.7
Divorced	-	-	-	-
Separated	-	-	1	4.3
Widowed	-	-	-	-
Total	24	100.0	23	100.0

Years of education of building principals Change school principals have more graduate education than their colleagues in control schools. The means reported in Table 33 were 18.167 years and 17.696 years for change and control school principals, respectively - a difference of nearly one-half year. The pooled t-test value of 1.1546 indicated a difference does exist but it is not statistically significant.

Degrees earned by building principals Building principals from change schools have earned more advanced degrees (7 to 3) than the principals from control schools. While not significant, a t-test value of 1.1546 was indicated between the means of the two groups. These figures are reported in Table 34.

Table 33. Descriptive data of responses by building principals concerning the personal characteristic Years of Education

	Change schools		Control schools	
Years	N	Percentage	N	Percentage
15.00	-	-	1	4.3
16.00	-	-	-	-
17.00	6	25.0	8	34.8
18.00	12	50.0	10	43.5
19.00	2	8.3	4	17.4
20.00	4	16.7	-	-
Total	24	100.0	23	100.0
Mean	Change = 18.167		Control = 17.696	
Std dev	= 1.007		= 0.926	
t-test value = 1.1546				

Table 34. Descriptive data of responses by building principals concerning the personal characteristic Degree

Degrees	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
Masters	17	70.8	20	87.0
Specialist	5	20.8	3	13.0
Doctorate	2	8.4	-	-
Total	24	100.0	23	100.0
Mean	Change = 3.375		Control = 3.130	
Std dev	= 0.647		= 0.344	
t-test value = 1.1016				

Income of building principals The income figures presented in Table 35 indicated change school principals received an additional compensation of 10 percent or $1,700 more than the control school principals. The average salary of change school principals was reported to be $18,750 as compared to $17,065. A pooled t-test value of 1.4006 was reported.

Table 35. Descriptive data of responses by building principals concerning the personal characteristic Income

Income	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
$10000 - 14999	1	4.2	5	21.7
15000 - 19999	16	66.7	15	65.2
20000 - 24999	7	29.1	3	13.1
Total	24	100.0	23	100.0
Mean	Change = 4.250 or $18,750		Control = 3.913 or $17065	
Std dev	= 0.532		= 0.596	
t-test value = 1.4006				

Tenure of building principals As experienced by the superintendents also, the change school principals reported less time in their position than did the control school principals. Table 36 indicated a mean incumbency of 7.042 years for change principals and 9.913 years for control principals, a difference of nearly three years. However, the range of years of experience in their positions and variation of the distribution minimized the difference between the means, and the reported pooled t-test value of a negative 0.9893 indicated no statistical significant difference.

Table 36. Descriptive data of responses by building principals concerning the personal characteristic Tenure

	Change schools		Control schools	
Tenure	N	Percentage	N	Percentage
1.00 - 5.00	11	45.7	9	39.1
6.00 - 10.00	8	33.3	6	21.8
11.00 - 15.00	2	8.4	4	17.4
16.00 - 20.00	2	8.4	2	8.7
21.00 - 25.00	1	4.2	2	8.7
26.00 - 30.00	-	-	1	4.3
Total	24	100.0	23	100.0
Mean	Change = 7.042		Control = 9.913	
Std dev	= 6.168		= 7.519	

t-test value = (-0.9893)

Political affiliations of building principals The responses reported in Table 37 concerning the political affiliations of building principals were very similar between the change group and control school principals. However, their selections proved to be the most varied between the three members of the administrative change team. Although the Republican party remained the favored selection, the choice was very close. The change principals indicated 45.8 percent Republican to 33.3 percent Democrat, and the control school principals indicated an exact tie with 39.1 percent favoring both the Republican and the Democratic parties. Over one-fifth of both groups claimed to be independents.

Ancestral background of building principals The responses to the variable concerning the principals' or their families' ancestral background were accumulated in Table 38. Their responses were grouped into four geographical areas: 1) Scandinavian; 2) Middle Europe; 3) England; and 4) Others. All responses were cataloged into the first three classifications. In the event the principal responded with a

Table 37. Descriptive data of responses by building principals concerning the personal characteristic Political Party

	Change schools		Control schools	
Party	N	Percentage	N	Percentage
Democrat	8	33.3	9	39.1
Republican	11	45.8	9	39.1
No Party	5	20.9	5	21.8
Other	-	-	-	-
Total	24	100.0	23	100.0

Table 38. Descriptive data of responses of building principals concerning the personal characteristic Ancestral Background

Description	Change schools N	Change schools Percentage	Control schools N	Control schools Percentage
1.00 - Scandinavian				
Danish	-	-	2	8.7
Norwegian	1	4.2	1	4.4
Swedish	2	8.3	2	8.7
Total	3	12.5	5	21.8
2.00 - Middle Europe				
German	13	54.1	7	30.5
German-Danish	1	4.2	-	-
German-Norwegian	-	-	1	4.3
Polish	-	-	1	4.3
Total	14	58.3	9	39.1
3.00 - England				
English	2	8.3	7	30.5
English-German	1	4.2	1	4.3
Irish	-	-	1	4.3
Irish-German	2	8.3	-	-
Scotch	1	4.2	-	-
Scotch-Irish	1	4.2	-	-
Total	7	29.2	9	39.1
4.00 - Other	-	-	-	-
Grand total	24	100.0	23	100.0

mixed background, i.e. English-German, the response was classified according to the first-mentioned heritage. In the example, the response was classified under England. Over half (54.1 percent) of the change school principals claimed a German heritage and 58.3 percent indicated Middle Europe origins. This compares with 39.1 percent Middle Europe indications from the control school principals. The control school

principals indicated their origins to be fairly consistent across the three classifications while the change school principals displayed a propensity toward Middle Europe and England ancestral backgrounds.

Religious preference of building principals Table 39 displayed the responses to the variable religious preference. The responses between change and control school principals were similar with 83.3 percent of the change school principals and 78.3 percent of the control principals indicated preference toward the Protestant faiths. The Catholic faith was preferred by 16.7 percent of the change principals and 21.7 percent of the control principals.

Table 39. Descriptive data of responses by building principals concerning the personal characteristic Religion

	Change schools		Control schools	
Religion	N	Percentage	N	Percentage
Protestant	20	83.3	17	78.3
Catholic	4	16.7	6	21.7
Total	24	100.0	23	100.0

Organizational Climate

Introduction

Part 2 of the questionnaire collected information relative to the respondent's opinion about the organizational climate that existed within the survey school. Four sub-sets of Halpin's Organizational Climate Description Questionnaire (OCDQ) (25) were used: 1) Disengagement;

2) Hindrance; 3) Esprit; and 4) Intimacy. The classification of responses requested was as follows: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; and 4) Very frequently occurs. The responses are additive in nature, and the total responses for each classification in each sub-set was calculated, and a mean, standard deviation, and pooled t-test value for the entire sub-set was established. If the group responses to a sub-set were statistically significant, a pooled t-test was then calculated for each question in the sub-set to determine the degree of each question's contribution to the significance of the sub-set responses.

Board members

Disengagement The responses of the change and control board members were very similar in this sub-set. Table 40 contained the data on disengagement which showed the mean for the change group to be 1.604 and the mean of the control group as 1.606. Both groups saw the teachers in the survey school to be more of a cooperative group rather than individuals. There was no significant difference between group means as indicated by a pooled t-test value of a negative 0.0459.

Hindrance The data contained in Table 41 indicated close agreement between the change school board members' responses and those of the control school boards to the sub-set hindrance. The reported mean for the change school was 2.078 as compared to 2.041 for the control group. The pooled t-test shows no significant difference, but it does signify that the change school board members thought the climate to be slightly more closed than the control group.

Table 40. Descriptive data of responses by board members concerning the organizational climate sub-set Disengagement

Question	Change schools 1	2	3	4	$\bar{X}$	s	Control schools 1	2	3	4[a]	$\bar{X}$	s
1. The mannerisms of teachers at this school are annoying.	61	50	3	2	1.534	0.638	54	37	4	-	1.474	0.581
2. There is a minority group of teachers who always oppose the majority.	65	36	9	5	1.600	0.814	49	31	10	5	1.695	0.864
3. Teachers exert group pressure on non-conforming faculty members.	53	43	9	7	1.732	0.859	36	39	15	2	1.815	0.783
4. Teachers seek special favors from the principal.	61	49	2	1	1.496	0.584	50	35	1	1	1.460	0.587
5. Teachers at this school stay by themselves.	50	42	17	5	1.798	0.854	39	36	13	3	1.780	0.814
6. Teachers talk about leaving the school system.	75	30	7	2	1.439	0.692	55	30	6	2	1.516	0.716
Total	365	250	47	22			283	208	49	13		
Mean	Change = 1.604						Control = 1.606					
Std dev	= 0.0459						= 0.7387					
t-test value = (-0.0459)												

[a]Classifications: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

Table 41. Descriptive data of responses by board members concerning the organizational climate sub-set Hindrance

Question	Change schools 1	2	3	4	$\bar{X}$	s	Control schools 1	2	3	4[a]	$\bar{X}$	s
7. Routine duties interfere with the job of teaching.	62	48	6	-	1.517	0.597	50	40	2	1	1.505	0.601
8. Teachers have too many committee requirements.	79	33	3	-	1.339	0.528	64	27	1	-	1.315	0.490
9. Administrative paper work is burdensome at this school	49	45	11	6	1.766	0.842	51	32	7	1	1.538	0.688
10. Instructions for the operation of teaching aids are available.	13	15	38	42	3.009	1.009	8	15	29	36	3.057	0.975
11. Sufficient time is given to prepare administrative reports.	8	12	60	30	3.018	0.824	6	13	31	39	3.157	0.916
24. Student progress reports require too much work.	42	54	12	4	1.804	0.769	39	36	6	4	1.706	0.799
Total	253	207	130	82			218	163	76	81		
Mean	Change = 2.078						Control = 2.041					
Std dev	= 1.044						= 1.095					
t-test value = 0.5854												

[a]Classifications: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

Esprit Both the change school board members and the control school board members thought their school possessed good spirit. The mean for the change group was indicated in Table 42 as 3.0413 and the control group reported a mean of 2.9799. The pooled t-test value of 1.1830 was not significant.

Intimacy Both the change school boards and the control school boards estimated the climates of their schools to be open in respect to interrelationships of staff members. The change group indicated a mean of 2.7955 and the control group showed a mean of 2.7723. Table 43 contained the computed t-test value for the sub-set intimacy as 0.4312. No significant difference was noted.

Superintendents

Disengagement The superintendents of the change and control schools all reported the climate to be more toward the openness and the teachers engaging in their activities. The change superintendents' average response was 1.849 as compared to 1.788 for the control superintendents. The t-test value was reported in Table 44 as 0.6230 or no significant difference.

Hindrance No significant difference was reported between the average response of the change school superintendents and the control school superintendents. The pooled t-test for the sub-set hindrance was reported in Table 45 as a value of 0.2117 which was calculated from a change group mean of 2.200 and a control group mean of 2.174.

Esprit Superintendents of both change and control schools were similar in their responses to the sub-set esprit. Both groups

Table 42. Descriptive data of responses by board members concerning the organizational climate sub-set Esprit

Question	Change schools						Control schools					
	1	2	3	4	$\bar{X}$	s	1	2	3	4[a]	$\bar{X}$	s
12. The morale of the teachers is high.	9	14	44	46	3.124	0.917	6	7	39	39	3.220	0.854
13. The teachers accomplish their work with great vim, vigor, and pleasure.	4	23	63	24	2.939	0.744	7	17	47	20	2.879	0.841
14. Custodial service is available when needed.	5	8	41	60	3.368	0.801	4	7	27	56	3.436	0.811
15. Most teachers here accept the faults of their colleagues.	7	27	44	31	2.908	0.888	9	19	43	19	2.800	0.889
16. Teachers spend time after school with students who have individual problems.	16	39	40	21	2.569	0.944	10	39	33	11	2.484	0.842
23. Extra books are available for classroom use.	1	15	45	53	3.316	0.733	4	11	34	42	3.253	0.838
Total	42	126	277	235			40	100	223	187		
Mean	Change = 3.0413						Control = 2.9799					
Std dev	= 0.8726						= 0.9212					
t-test value = 1.1830												

[a]Classifications: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

Table 43. Descriptive data of responses by board members concerning the organizational climate sub-set Intimacy[1]

Question	Change schools 1	2	3	4	$\bar{X}$	s	Control schools 1	2	3	4[a]	$\bar{X}$	s
17. Teachers' closest friends are other faculty members at this school.	4	25	48	35	3.018	0.827	4	17	42	27	3.022	0.821
18. Teachers invite other faculty members to visit them at their homes.	3	25	54	30	2.991	0.777	4	20	39	25	2.966	0.837
19. Teachers talk about their personal life to other faculty members.	8	44	34	14	2.540	0.834	9	31	28	11	2.519	0.875
20. Teachers know the family background of other faculty members.	7	38	41	22	2.722	0.863	10	27	24	20	2.667	0.987
21. There is considerable laughter when teachers gather together.	10	24	49	28	2.856	0.903	5	21	37	23	2.907	0.863
Total	32	156	226	129			32	116	170	106		
Mean	Change = 2.7955						Control = 2.7723					
Std dev	= 0.8448						= 0.8505					
t-test value = 0.4312												

[a]Classifications: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

Table 44. Descriptive data of responses by superintendents concerning the organizational climate sub-set Disengagement

Question	Change schools						Control schools					
	1	2	3	4	$\bar{X}$	s	1	2	3	4[a]	$\bar{X}$	s
1. The mannerisms of teachers at this school are annoying.	10	11	-	-	1.524	0.512	12	9	1	-	1.500	0.598
2. There is a minority group of teachers who always oppose the majority.	6	12	2	1	1.905	0.768	5	12	2	2	2.136	0.941
3. Teachers exert group pressure on non-conforming faculty members.	5	9	4	3	2.238	0.995	6	10	4	2	2.091	0.921
4. Teachers seek special favors from the principal.	9	10	1	1	1.714	0.784	7	14	1	-	1.727	0.550
5. Teachers at this school stay by themselves.	10	7	3	1	1.762	0.889	10	11	1	-	1.591	0.590
6. Teachers talk about leaving the school system.	8	12	-	-	1.600	0.503	10	10	1	1	1.682	0.780
Total	48	61	10	6			50	66	10	5		
Mean	Change = 1.849						Control = 1.788					
Std dev	= 0.8106						= 0.7719					
t-test value = 0.6230												

[a]Classifications: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

Table 45. Descriptive data of responses by superintendents concerning the organizational climate sub-set Hindrance

Question	Change schools 1	2	3	4	$\bar{X}$	s	Control schools 1	2	3	4[a]	$\bar{X}$	s
7. Routine duties interfere with the job of teaching.	6	[illegible]					[illegible]		2	-	1.727	0.631
8. Teachers have too many committee requirements.	1[illegible]								1	-	1.409	0.590
9. Administrative paper work is burdensome at this school.										-	1.727	0.631
10. Instructions for the operation of teaching aids are available.									9		3.136	0.889
11. Sufficient time is given to prepare administrative reports.									8	9	2.136	0.889
24. Student progress reports require too much work.	6								2	1	1.909	0.750
Total	32	51	27	15			38	51	23	19		
Mean	Change = 2.200						Control = 2.174					
Std dev	= 0.9490						= 1.0076					
t-test value = 0.2117												

[a]Classifications: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

saw the climate as being open. The mean for the change group superintendents' responses, as reported in Table 46, was 3.045 while the reported average of the control school superintendents' responses was 3.023. The t-test value was calculated at 0.2270 for no significant difference.

Intimacy Analysis of the means for the sub-set intimacy reported in Table 47 indicated a negatively significant difference at the 0.001 level of significance. The reported pooled t-test value was a minus 3.8782****. While both groups saw the average teacher to be more open than closed in their interaction with each other, the change school superintendents tended to be significantly more cautious in their assessment of the climate. They reported a mean of 2.712 as compared to the mean of the control group of 2.954.

Individual t-test for each question indicated that all questions except one contributed to the negative t-test with the majority of difference being recorded in the difference to question 20, the knowledge of family backgrounds. Question 20 in itself was significant at the 0.05 level.

Building principals

Disengagement Both groups of building principals reported open climates in their buildings in regard to the sub-set disengagement. The change school principals reported a mean of 1.732 which was very similar to the 1.725 mean reported by the control school principals. No significant difference was noted.

Table 45. Descriptive data of responses by superintendents concerning the organizational climate sub-set Hindrance

Question	Change schools						Control schools					
	1	2	3	4	$\bar{X}$	s	1	2	3	4[a]	$\bar{X}$	s
7. Routine duties interfere with the job of teaching.	6	14	1	-	1.762	0.539	8	12	2	-	1.727	0.631
8. Teachers have too many committee requirements.	13	6	2	-	1.476	0.680	14	7	1	-	1.409	0.590
9. Administrative paper work is burdensome at this school.	7	12	2	-	1.762	0.625	8	12	2	-	1.727	0.631
10. Instructions for the operation of teaching aids are available.	-	3	10	8	3.238	0.700	1	4	8	9	3.136	0.889
11. Sufficient time is given to prepare administrative reports.	-	5	9	7	3.095	0.768	1	4	8	9	2.136	0.889
24. Student progress reports require too much work.	6	11	3	-	1.850	0.671	6	13	2	1	1.909	0.750
Total	32	51	27	15			38	51	23	19		
Mean	Change = 2.200						Control = 2.174					
Std dev	= 0.9490						= 1.0076					
t-test value = 0.2117												

[a]Classifications: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

saw the climate as being open. The mean for the change group superintendents' responses, as reported in Table 46, was 3.045 while the reported average of the control school superintendents' responses was 3.023. The t-test value was calculated at 0.2270 for no significant difference.

Intimacy Analysis of the means for the sub-set intimacy reported in Table 47 indicated a negatively significant difference at the 0.001 level of significance. The reported pooled t-test value was a minus 3.8782****. While both groups saw the average teacher to be more open than closed in their interaction with each other, the change school superintendents tended to be significantly more cautious in their assessment of the climate. They reported a mean of 2.712 as compared to the mean of the control group of 2.954.

Individual t-test for each question indicated that all questions except one contributed to the negative t-test with the majority of difference being recorded in the difference to question 20, the knowledge of family backgrounds. Question 20 in itself was significant at the 0.05 level.

Building principals

Disengagement Both groups of building principals reported open climates in their buildings in regard to the sub-set disengagement. The change school principals reported a mean of 1.732 which was very similar to the 1.725 mean reported by the control school principals. No significant difference was noted.

Table 46. Descriptive data of responses by superintendents concerning the organizational climate sub-set Esprit

Question	Change schools						Control schools					
	1	2	3	4	$\bar{X}$	s	1	2	3	4[a]	$\bar{X}$	s
12. The morale of the teachers is high.	-	3	7	11	3.381	0.740	-	2	12	8	3.273	0.631
13. The teachers accomplish their work with great vim, vigor, and pleasure.	-	5	11	5	3.000	0.707	1	3	17	1	2.818	0.588
14. Custodial service is available when needed.	-	1	10	10	3.429	0.598	1	2	9	10	3.273	0.827
15. Most teachers here accept the faults of their colleagues.	1	4	14	2	2.810	0.680	1	3	13	5	3.000	0.756
16. Teachers spend time after school with students who have individual problems	1	8	11	1	2.571	0.676	5	6	7	4	2.455	1.057
23. Extra books are available for classroom use.	-	2	10	9	3,333	0.658	-	1	13	8	3.318	0.568
Total	2	23	63	38			8	17	71	36		
Mean	Change = 3.045						Control = 3.023					
Std dev	= 0.7801						= 0.8052					
t-test value = 0.2270												

[a]Classifications: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

Table 47. Descriptive data of responses by superintendents concerning the organizational climate sub-set Intimacy

Question	Change schools 1	2	3	4	$\bar{X}$	s	Control schools 1	2	3	4[a]	$\bar{X}$	s	t-tests
17. Teachers' closest friends are other faculty members at this school.	-	7	10	4	2.857	0.727	-	1	17	4	3.136	0.468	-1.46
18. Teachers invite other faculty members to visit them at their homes.	-	5	9	7	3.095	0.768	-	3	14	5	3.091	0.610	0.31
19. Teachers talk about their personal life to other faculty members.	1	11	7	2	2.476	0.750	-	8	11	3	2.773	0.685	-1.07
20. Teachers know the family background of other faculty members.	4	10	5	2	2.238	0.889	-	8	10	4	2.818	0.733	-2.09
21. There is considerable laughter when teachers gather together.	-	4	12	5	3.048	0.669	-	1	16	5	3.182	0.501	-0.41
22. Teachers work together preparing administrative reports.	-	10	10	1	2.571	0.598	2	4	14	2	2.727	0.767	-0.69
Total	5	47	53	21			2	25	82	23			
Mean	Change = 2.712						Control = 2.954						
Std dev	= 0.7866						= 0.6522						

t-test value = $(-3.8782)^{***}$ = Significant at the 0.001 level

[a]Classifications: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

Table 48. Descriptive data of responses by building principals concerning the organizational climate sub-set Disengagement

Question	Change schools						Control schools					
	1	2	3	4	$\bar{X}$	s	1	2	3	4[a]	$\bar{X}$	s
1. The mannerisms of teachers at this school are annoying.	14	8	2	-	1.500	0.659	14	7	2	-	1.478	0.665
2. There is a minority group of teachers who always oppose the majority.	11	11	1	1	1.667	0.761	9	11	1	2	1.826	0.887
3. Teachers exert group pressure on non-conforming faculty members.	1	13	8	2	2.458	0.721	4	12	6	1	2.174	0.778
4. Teachers seek special favors from the principal.	10	12	2	-	1.667	0.637	11	10	2	-	1.609	0.637
5. Teachers at this school stay by themselves.	11	9	3	1	1.750	0.847	8	12	3	-	1.783	0.671
6. Teachers talk about leaving the school system.	13	11	-	-	1.458	0.509	14	8	-	1	1.478	0.730
Total	60	64	16	4			60	60	14	4		
Mean	Change = 1.731						Control = 1.725					
Std dev	= 0.753						= 0.762					
t-test value = 0.0647												

[a]Classification: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

Hindrance Both principal groups indicated similar responses to this sub-set. Table 49 indicated that the change school principals saw the climate as slightly more open with a mean response of 2.0397. This agrees with the calculated mean for the control school principals of 2.0217. The t-test value of 0.1643 indicated no significant difference.

Esprit Both change and control school principals reported their climates to be open in respect to the sub-set Esprit. The change school principals, however, were more enthusiastic with their responses when they reported a mean of 3.2063 as compared to 2.9058 for the control school principals. This difference was reported as significant at the 0.001 level with a calculated pooled t-test value of 3.8182****.

Analysis of the individual t-test for questions in this sub-set revealed that questions 12, 13, and 23 contributed heavily to the significant difference. These questions dealt with teachers' morale, enthusiasm, and the availability of supplies. The change principals reported their teachers to be significantly more enthusiastic as this question by itself caused a t-test difference of 2.40 which is significant at the 0.05 level.

Intimacy The difference between the change and control school principals' means of 3.016 and 2.841, respectively, was significant at the 0.001 level of significance. This response is diametrically opposed to the response of the superintendents who reported a negative significance at the 0.001 level! Both groups indicated an open climate in their buildings, with the change group being more emphatic in their

Table 49. Descriptive data of responses by building principals concerning the organizational climate sub-set Hindrance

Question	Change schools						Control schools					
	1	2	3	4	$\bar{X}$	s	1	2	3	4[a]	$\bar{X}$	s
7. Routine duties interfere with the job of teaching.	7	15	2	-	1.792	0.588	5	17	1	-	1.826	0.491
8. Teachers have too many committee requirements.	17	7	-	-	1.292	0.464	12	9	1	1	1.609	0.783
9. Administrative paper work is burdensome at this school.	9	12	3	-	1.750	0.676	11	9	3	-	1.652	0.714
10. Instructions for the operation of teaching aids are available.	3	2	15	3	2.783	0.850	5	3	12	3	2.565	0.992
11. Sufficient time is given to prepare administrative reports.	-	3	16	5	3.083	0.584	2	4	13	4	2.826	0.834
24. Student progress reports require too much work.	10	10	4	-	1.750	0.737	8	15	-	-	1.652	0.487
Total	46	49	40	8			33	57	30	8		
Mean	Change = 2.0397						Control = 2.0217					
Std dev	= 0.9156						= 0.8752					
t-test value = 0.1643												

[a]Classifications: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

Table 50. Descriptive data of responses by building principals concerning the organizational climate sub-set Esprit

Question	Change schools 1	2	3	4	$\bar{X}$	s	Control schools 1	2	3	4[a]	$\bar{X}$	s	t-tests
12. The morale of the teachers is high.	-	1	9	13	3.522	0.593	2	2	10	9	3.130	0.920	1.71
13. The teachers accomplish their work with great vim, vigor, and pleasure.	-	1	20	3	3.083	0.408	2	6	13	2	2.652	0.775	2.40
14. Custodial service is available when needed.	-	2	12	9	3.304	0.635	1	2	9	11	3.304	0.822	0.00
15. Most teachers here accept the faults of their colleagues.	1	5	14	4	2.875	0.741	2	5	13	3	2.739	0.810	0.60
16. Teachers spend time after school with students who have individual problems.	1	8	12	2	2.652	0.714	2	10	9	2	2.478	0.790	0.78
23. Extra books are available for classroom use.	-	1	8	15	3.583	0.584	-	3	10	9	3.273	0.703	1.62
Total	2	18	75	46			9	28	64	36			
Mean	Change = 3.2063						Control = 2.9058						
Std dev	= 0.6364						= 0.8869						

t-test value = 3.8182**** = Significant at 0.001 level.

[a]Classifications: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

opinions. The reported t-test, calculated and reported in Table 51, was 2.7006***.

An analysis of the reasons for the disparity between the responses of the change superintendents and change principals to this sub-set indicated a feeling of belonging, of group identity experiences by the building principals in the change schools, was not shared by the superintendents to the same degree. It is possible that changes and interactions were taking place in change schools without the direct influence of the superintendents, thus creating a feeling of discontinued relationships.

The individual t-tests for each question in the sub-set Intimacy revealed that while the first question (numbers 17 and 18) showed a negative pooled t-test, the balance of the questions in this sub-set were sufficiently different in responses to total as highly significant difference for the sub-set. The main contributor was question 21 which dealt with the friendliness of the teachers as a group.

Criticisms

Introduction

Part 3 of the questionnaire collected data relative to the reactions of the administrative team to selected criticisms of public secondary education. The 25 questions of the criticism section were arranged into five classifications: 1) school costs; 2) teaching methods and procedures; 3) policy making; 4) curriculum; and 5) teachers. The specific questions were selected from the Robinson study in 1968 in

Table 51. Descriptive data of responses by building principals concerning the organizational climate sub-set Intimacy

Question	Change schools 1	2	3	4	$\bar{X}$	s	Control schools 1	2	3	4[a]	$\bar{X}$	s	t-tests
17. Teachers' closest friends are other faculty members at this school.	-	6	11	7	3.042	0.751	-	6	10	7	3.043	0.767	-0.01
18. Teachers invite other faculty members to visit them at their homes.	-	6	13	5	2.958	0.690	-	4	13	6	3.087	0.668	-0.65
19. Teachers talk about their personal life to other faculty members.	1	9	10	4	2.708	0.806	3	7	11	2	2.522	0.846	0.77
20. Teachers know the family background of other faculty members.	-	10	11	3	2.708	0.690	2	8	10	3	2.609	0.839	0.44
21. There is considerable laughter when teachers gather together.	-	-	11	13	3.542	0.509	-	2	14	7	3.217	0.600	1.99
22. Teachers work together preparing administrative reports.	-	6	14	4	2.917	0.654	3	7	10	3	2.565	0.896	1.53
Total	1	37	70	36			8	34	68	28			
Mean	Change = 3.016						Control = 2.841						
Std dev	= 0.7153						= 0.8127						

t-test value = 2.7006*** = Significant at the 0.01 level.

[a]Classifications: 1) Rarely occurs; 2) Sometimes occurs; 3) Often occurs; 4) Very frequently occurs.

which he sought to measure the reaction of Iowa board members to criticisms leveled toward education.

The respondents were asked to select one of five possible choices on a continuum which best described their opinion about the questions. Those classifications were: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree. The responses to each of these classifications were added together for the five questions included in each sub-set, and the total response for the sub-set was treated statistically to determine any differences between the responses of change or control administrative change team members. If the sub-section was tested to be significantly different, each question of the sub-set was then tested by using the pooled t-test method to determine the degree to which each individual question contributed to the significant difference.

Board members

School costs The data collected relative to the criticism school costs was included in Table 52. The responses of the two board groups were quite similar. The change school board members reported a mean of 3.259 as compared to a mean of 3.248 for the control school board members. It is noted, however, that both groups had a number of responses in each of the classifications, although the mode response tended to disagree with this criticism. No significant differences were reported.

Teaching methods and procedures No significant differences were reported in Table 53 for this criticism. The mean of the change

Table 52. Descriptive data of responses by board members concerning the criticism School Costs

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
1. The schools being constructed today are too luxurious and costly.	10	30	11	53	17	3.306	1.224	13	24	6	43	8	3.096	1.271
2. The more money or less money available to a school has very little to do with the quality of the district's educational program.	12	34	2	52	21	3.298	1.314	6	27	3	43	16	3.379	1.239
3. Serious consideration should be given to increasing the pupil-teacher ratio as means of lowering costs.	13	33	11	50	14	3.157	1.252	4	22	15	40	15	3.417	1.130
4. There are adequate funds for essentials, but too much trimmings use up funds.	13	37	13	49	9	3.033	1.204	12	32	4	39	8	2.989	1.267
5. Considering the efficiency of job performance, public schools administrators' salaries are too high.	8	17	17	65	14	3.496	1.081	9	11	19	42	14	3.432	1.164
Total	56	151	54	269	75			44	116	47	207	61		
Mean	Change = 3.248							Control = 3.259						
Std dev	= 1.219							= 1.203						
t-test value = (-0.1498)														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

Table 53. Descriptive data of responses by board members concerning the criticism Teaching Methods and Procedures

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
6. The schools have been taken over by the modern "progressive" educator.	8	13	11	54	9	3.453	1.109	5	24	18	66	8	3.397	1.012
7. Such titles as Schools without Scholars, Educational Wastelands, and Quackery in the Public Schools are very descriptive of the current public school scene.	-	3	14	54	23	4.032	0.725	2	12	8	58	40	4.017	0.979
8. Lax discipline in the public school is contributing to the increase in juvenile deliquency.	16	18	16	36	9	3.042	1.279	18	34	12	37	19	3.042	1.356
9. Requirements for a "passing" grade should be the same for every child.	2	17	8	47	22	3.729	1.071	6	17	11	60	27	3.702	1.115
10. Schools are trying to spread themselves too thin when they subscribe to the phrase "all the children of all the people need to be educated."	6	13	6	54	17	3.656	1.113	3	15	6	64	33	3.901	1.020
Total	32	64	55	245	80			34	102	55	285	127		
Mean	Change = 3.260							Control = 3.248						
Std dev	= 1.128							= 1.054						
t-test value = 0.1769														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

school board members responses was 3.260 and the mean of the control school board members' responses was 3.248. The pooled t-test value for this criticism was 0.1769. Once again, the range of responses is noteworthy, particularly to the question pertaining to lax discipline.

Policy making A difference in responses, albeit not significant statistically, was registered in the data presented in Table 54. Both groups' responses were fairly well diffused throughout the continuum. However, the change school board members disagreed with the criticisms more than their control school counterparts. The reported means were 3.193 and 3.088 for change and control groups, respectively. The pooled t-test value was 1.3869.

Curriculum Both the change and the control school board members were in agreement in their disagreement toward the criticisms of curriculum. The mean reported in Table 55 for the change group was 3.656 as compared to a mean of 3.643 for the control school board members. The pooled t-test was reported as 0.2083. No significant difference was revealed.

Teachers The similarity between the responses of both groups was again observed in the data reported in Table 56. The change school board members' mean response was 3.259 while the control group's response averaged 3.248. The pooled t-test registered 0.1769 and was not significant.

Superintendents

School costs The change and control school superintendents were consistent to each other in their responses to the criticism

Table 54. Descriptive data of responses by board members concerning the criticism Policy Making

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
11. Public education is the exclusive concern of state and local government and any form of federal aid to education imperils this principle.	9	19	4	52	11	3.389	1.205	4	21	13	61	21	3.617	1.070
12. The control of our schools must be returned to the parents and communities whose traditional right it is to exercise such control.	17	42	10	19	5	2.495	1.167	21	42	19	36	1	2.613	1.121
13. The state Department of Public Instruction has too much power over local school districts.	12	31	14	36	2	2.842	1.133	13	36	11	55	5	3.025	1.170
14. Professional educators should play a less prominent role in determining the goals of education.	5	16	11	55	7	3.457	1.033	4	21	19	62	12	3.483	1.010
15. The state Department of Public Instruction should approve all school districts which the patrons are willing to support.	3	23	23	33	10	3.261	1.057	5	28	18	54	12	3.342	1.084
Total	46	131	62	195	35			47	148	80	268	51		
Mean	Change = 3.193							Control = 3.088						
Std dev	= 1.153							= 1.179						
t-test value = 1.3869														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

Table 55. Descriptive data of responses by board members concerning the criticism Curriculum

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
16. The public schools are not teaching the fundamentals as well today as they used to.	12	28	9	57	14	3.275	1.230	6	29	3	49	8	3.253	1.167
17. Schools should acknowledge that academic subjects are more valuable than vocational subjects by adopting a dual grading system.	1	12	15	67	24	3.849	0.889	1	7	15	46	26	3.937	0.909
18. Life adjustment education movement is replacing intellectual training with soft social programs in most public school systems.	2	27	38	47	4	3.203	0.892	1	24	25	38	4	3.217	0.924
19. Group discussions on social problems take emphasis away from the fundamental academic subjects.	4	21	11	76	8	3.525	0.970	4	16	10	60	5	3.484	0.977
20. College prep students should be discouraged from taking such frills as driver education, vocational courses, art, music, and literature.	1	2	-	61	56	4.408	0.667	1	2	3	56	33	4.242	0.710
Total	20	90	73	308	106			13	78	56	249	76		
Mean	Change = 3.656							Control = 3.643						
Std dev	= 1.042							= 1.011						
t-test value = 0.2083														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

Table 56. Descriptive data of responses by board members concerning the criticism Teachers

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
21. The trouble with the public schools today can be attributed in large part to the low quality of educational training teachers receive in schools of education.	8	20	17	53	22	3.508	1.167	2	17	11	48	16	2.968	1.037
22. Many teachers and schools have abolished all methods of overt physical discipline and as a result classroom conduct disintegrated.	9	42	13	51	5	3.008	1.119	5	36	13	37	3		
23. The teacher education program has emphasized the "know how" of teaching to the detriment of the "know what."	4	31	36	41	5	3.103	0.959	1	26	36	27	1	3.011	0.823
24. The number of professional courses in teacher education programs are evasive and state certification requirements over-emphasize professional educational courses.	9	44	40	23	1	2.684	0.906	7	35	32	18	-	2.663	0.881
25. The teacher should spend more of his time with those students who have the greatest intellectual potential.	1	7	4	79	28	4.059	0.762	2	5	7	55	24	4.011	0.866
Total	31	144	110	247	61			17	119	99	185	44		
Mean	Change = 3.259							Control = 3.248						
Std dev	= 1.128							= 1.054						
t-test value = 0.1769														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

school costs. The means reported in Table 57 were 3.801 and 3.736 for the change and control superintendents, respectively. No significant difference was apparent with the pooled t-test value recorded as 0.4455.

Teaching methods and procedures Neither superintendent group agreed with the criticism pertaining to teaching methods and procedures. The change superintendents disagreement was slightly stronger and showed a mean of 4.010 as compared to a mean of 3.945 for the responses made by the control school superintendents. The t-test value reported in Table 58 was 0.4679 which is not significant.

Policy making Although both superintendent groups basically disagreed with these criticisms, the change school superintendents saw more interplay between local and state control of school districts and less local control than their control school counterparts. Table 59 reported a mean of 3.952 for the change group and 3.818 for the control group. The difference between these means tested as 1.000 which was not statistically different.

Curriculum Both of the superintendent groups signified their disagreement to the critical statements concerning curriculum. The pooled t-test value of 0.8868 showed the change school superintendents more consolidated in their disapproval than the control school superintendents. Table 60 recorded means of 4.1905 and 4.091 for the change and control superintendents, respectively. There was no significant difference, however, with a t-test value recorded at 0.8868.

Table 57. Descriptive data of responses by superintendents concerning the criticism School Costs

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
1. The schools being constructed today are too luxurious and costly.	2	3	1	7	8	3.762	1.375	-	5	2	13	2	3.545	0.963
2. The more money or less money available to a school has very little to do with the quality of the district's educational program.	1	4	-	12	4	3.667	1.155	2	4	-	10	6	3.636	1.329
3. Serious consideration should be given to increasing the pupil-teacher ratio as a means of lowering costs.	1	5	-	13	2	3.476	1.123	1	4	-	11	6	3.773	1.193
4. There are adequate funds for essentials, but too much trimmings use up funds.	1	3	2	10	5	3.714	1.146	-	9	2	9	2	3.182	1.097
5. Considering the efficiency of job performance, public school administrators' salaries are too high.	-	1	1	8	10	4.350	0.813	-	-	1	8	13	4.545	0.596
Total	5	16	4	50	29			3	22	5	51	29		
Mean	Change = 3.801							Control = 3.736						
Std dev	= 1.1432							= 1.1388						
t-test value = 0.4455														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

Table 58. Descriptive data of responses by superintendents concerning the criticism Teaching Methods and Procedures

Question	Change schools							Control schools						
	1	2	3	4	5	$\bar{X}$	s	1	2	3	4	5[a]	$\bar{X}$	s
6. The schools have been taken over by the modern "progressive" educator.	1	2	1	13	4	3.810	1.030	-	1	2	15	4	4.000	0.690
7. Such titles as Schools without Scholars, Educational Wastelands, and Quackery in the Public Schools are very descriptive of the current public school scene.	-	5	-	10	6	3.810	1.123	-	1	3	10	8	4.136	0.834
8. Lax discipline in the public school is contributing to the increase in juvenile deliquency.	-	2	-	13	6	4.095	0.831	3	3	-	10	6	3.591	1.403
9. Requirements for a "passing" grade should be the same for every child.	-	1	-	10	10	4.381	0.740	-	-	2	9	11	4.409	0.666
10. Schools are trying to spread themselves too thin when they subscribe to the phrase "all the children of all the people need to be educated."	1	2	1	10	7	3.952	1.117	1	6	-	9	6	3.591	1.297
Total	2	12	2	56	33			4	11	7	53	35		
Mean	Change = 4.010							Control = 3.945						
Std dev	= 0.9854							= 1.0565						
t-test value = 0.4679														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

Table 59. Descriptive data of responses by superintendents concerning the criticism Policy Making

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
11. Public education is the exclusive concern of state and local government and any form of federal aid to education imperils this principle.	-	-	1	12	8	4.333	0.577	-	4	-	11	7	3.955	1.046
12. The control of our schools must be returned to the parents and communities whose traditional right it is to exercise such control.	-	6	2	11	2	3.429	1.028	2	6	8	3	3	2.955	1.174
13. The state Department of Public Instruction has too much power over local school districts.	-	-	-	18	3	4.143	0.359	-	2	-	17	3	3.955	0.722
14. Professional educators should play a less prominent role in determining the goals of education.	-	1	1	13	6	4.143	0.727	-	2	-	12	8	4.182	0.853
15. The state Department of Public Instruction should approve all school districts which the patrons are willing to support.	1	3	1	12	4	3.714	1.102	-	2	3	9	8	4.045	0.950
Total	1	10	5	55	23			2	16	11	51	29		
Mean	Change = 3.952							Control = 3.818						
Std dev	= 0.8591							= 1.0421						
t-test value = 1.0000														

[a]Classification: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

Table 60. Descriptive data of responses by superintendents concerning the criticism Curriculum

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
16. The public schools are not teaching the fundamentals as well today as they used to.	-	4	-	10	7	3.952	1.071	-	2	1	11	8	4.136	0.889
17. Schools should acknowledge that academic subjects are more valuable than vocational subjects by adopting a dual grading system.	-	-	-	10	11	4.524	0.512	-	1	2	12	7	4.136	0.774
18. Life adjustment education movement is replacing intellectual training with soft social programs in most public school systems.	-	3	1	11	6	3.952	0.973	-	3	5	9	5	3.727	0.985
19. Group discussions on social problems take emphasis away from the fundamental academic subject.	-	1	1	15	4	4.048	0.669	-	2	2	15	3	3.864	0.774
20. College prep students should be discouraged from taking such frills as driver education, vocational courses, art, music, and literature.	-	-	-	11	10	4.476	0.512	-	-	-	9	13	4.591	0.503
Total	-	8	2	57	38			-	8	10	56	36		
Mean	Change = 4.1905							Control = 4.091						
Std dev	= 0.8097							= 0.8410						
t-test value = 0.8868														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

Teachers The change school superintendents' responses averaged 3.562 while the control school superintendents' mean response was 3.555. These similar responses tested to a t-test value of 0.0484 which was not significant.

Building principals

School costs The change school principal's group and the control school principal's group each saw the criticisms about school costs as untrue. The change group reported an average response of 3.933 while the control group was more emphatic with a mean of 3.974. The similarity of the responses were reflected in the pooled t-test value recorded in Table 62 of a negative 0.3203. No significant difference was noted.

Teaching methods and procedures The average principal in both the change school and the control school groups disagreed with the statements in this sub-set, and their responses corresponded to each other. 3.725 and 3.757 were the means reported in Table 63 for the change school principals and the control school principals, respectively. The difference between the means was statistically insignificant with the pooled t-test value of a negative 0.2461 being calculated.

Policy making While neither the change group or control group of building principals saw education as the private domain of the local school district, the change school principals were more pronounced in their opinions. A t-test value of 0.8178 was reported in Table 64 which represented the statistical difference between the change principal's average response of 3.829 and the control group's mean of

Table 61. Descriptive data of responses by superintendents concerning the criticism Teachers

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
21. The trouble with the public schools today can be attributed in large part to the low quality of educational training teachers receive in schools of education.	-	5	-	12	4	3.714	1.056	1	3	2	12	4	3.682	1.086
22. Many teachers and schools have abolished all methods of overt physical discipline and as a result classroom conduct disintegrated.	-	6	2	9	4	3.524	1.123	-	7	2	10	3	3.409	1.098
23. The teacher education program has emphasized the "know how" of teaching to the detriment of the "know what."	-	5	1	14	1	3.524	0.928	-	5	2	12	3	3.591	1.008
24. The number of professional courses in teacher education programs are evasive and state certification requirements over-emphasize professional educational courses.	-	11	-	9	1	3.000	1.095	1	9	5	6	1	2.864	1.037
25. The teacher should spend more of his time with those students who have the greatest intellectual potential.	-	2	-	14	5	4.048	0.805	-	1	1	12	8	4.227	0.752
Total	31	144	110	247	61			17	119	99	185	44		
Mean	Change = 3.562							Control = 3.555						
Std dev	= 1.046							= 1.080						
t-test value = 0.0484														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

Table 62. Descriptive data of responses by building principals concerning the criticism School Costs

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
1. The schools being constructed today are too luxurious and costly.	-	2	1	14	7	4.083	0.830	1	3	-	13	6	3.870	1.100
2. The more money or less money available to a school has very little to do with the quality of the district's educational program.	-	6	2	11	5	3.625	1.096	-	3	4	9	7	3.870	1.014
3. Serious consideration should be given to increasing the pupil-teacher ratio as a means of lowering costs.	-	2	3	13	6	3.958	0.859	-	-	3	10	10	4.304	0.703
4. There are adequate funds for essentials, but oo much trimmings use up funds.	1	4	1	13	5	3.708	1.122	1	4	3	12	3	3.522	1.082
5. Considering the efficiency of job performance, public school administrators' salaries are too high.	-	2	2	7	13	4.292	0.955	-	1	1	11	10	4.304	0.765
Total	1	16	9	58	36			2	11	11	55	36		
Mean	Change = 3.933							Control = 3.974						
Std dev	= 0.9935							= 0.9775						
t-test value = (-0.3203)														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

Table 63. Descriptive data of responses by building principals concerning the criticism Teaching Methods and Procedures

Question	Change schools							Control schools						
	1	2	3	4	5	$\bar{X}$	s	1	2	3	4	5[a]	$\bar{X}$	s
6. The schools have been taken over by the modern "progressive" educator.	2	5	1	8	8	3.625	1.377	-	4	3	15	1	3.565	0.843
7. Such titles as Schools without Scholars, Educational Wastelands, and Quackery in the Public Schools are very descriptive of the current public school scene.	2	3	4	9	6	3.583	1.248	1	-	1	14	7	4.130	0.869
8. Lax discipline in the public school is contributing to the increase in juvenile deliquency.	1	3	3	11	6	3.750	1.113	-	8	1	12	2	3.348	1.071
9. Requirements for a "passing" grade should be the same for every child.	-	-	1	10	13	4.500	0.590	1	2	-	12	8	4.043	1.065
10. Schools are trying to spread themselves too thin when they subscribe to the phrase "all the children of all the people need to be educated."	3	6	2	10	3	3.167	1.308	-	4	4	10	5	3.696	1.020
Total	8	17	11	48	36			2	18	9	63	23		
Mean	Change = 3.725							Control = 3.757						
Std dev	= 1.223							= 1.005						
t-test value = (-0.2461)														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

Table 64. Descriptive data of responses by building principals concerning the criticism Policy Making

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
11. Public education is the exclusive concern of state and local government and any form of federal aid to education imperils this principle.	-	1	1	12	10	4.292	0.751	1	2	-	13	7	4.000	1.044
12. The control of our schools must be returned to the parents and communities whose traditional right it is to exercise such control.	2	4	4	12	1	3.261	1.096	2	5	6	9	1	3.087	1.083
13. The state Department of Public Instruction has too much power over local school districts.	-	2	3	16	3	3.833	0.761	-	4	5	12	2	3.522	0.898
14. Professional educators should play a less prominent role in determining the goals of education.	-	1	-	12	10	4.348	0.712	-	1	1	13	8	4.217	0.736
15. The state Department of Public Instruction should approve all school districts which the patrons are willing to support.	2	4	2	11	4	3.478	1.238	-	1	7	11	4	3.783	0.795
Total	4	12	10	63	28			3	13	19	58	22		
Mean	Change = 3.829							Control = 3.722						
Std dev	= 1.0139							= 0.9872						
t-test value = 0.8178														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

3.722. This was not considered to be significant.

Curriculum Once again the change school principals responded more negatively to the criticism statements of this sub-set than their counterparts. The change school principals' response totaled an average of 4.108 as compared to the change school principals' 3.974. While the pooled t-test showed a value of 1.2195, it is not at the statistical level accpeted in this study.

Teachers A difference significant at the 0.05 level was reported in Table 66 for the sub-set Teachers. The change school principals reported an average response of 3.692 as compared to the control school principals composite of 3.417. The pooled t-test of 1.9755** was indicated. Individual item t-test suggested that the majority of the difference can be attributed to questions 22, 23, and 24 with each adding sufficient difference to make the difference in means for the sub-set statistically significant.

Environment

Introduction

Part 4 of the questionnaire collected data which reflected the respondents' assessment of the school environment. Pertinent questions from Tolsma and Hopper's School Environmental Assessment Scale (SEAS) that were particularly germaine to this study were selected from each of the SEAS's seven sub-sets. Those sub-sets were: 1) Intellectual Self-expression; 2) Activity; 3) Heterosexual Expression; 4) Paternalism; 5) School Spirit; 6) Anti-Establishment; and 7) Authoritarian.

Table 65. Descriptive data of responses by building principals concerning the criticism Curriculum

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
16. The public schools are not teaching the fundamentals as well today as they used to.	1	4	3	7	9	3.792	1.250	-	3	3	13	4	3.783	0.902
17. Schools should acknowledge that academic subjects are more valuable than vocational subjects by adopting a dual grading system.	-	-	4	9	11	4.292	0.751	-	-	1	12	10	4.391	0.583
18. Life adjustment education movement is replacing intellectual training with soft social programs in most public school systems.	-	5	2	14	3	3.625	0.970	-	4	6	13	-	3.391	0.783
19. Group discussions on social problems take emphasis away from the fundamental academic subject.	-	2	-	15	7	4.125	0.797	-	2	2	18	1	3.783	0.671
20. College prep students should be discouraged from taking such frills as driver education, vocational courses, art, music, and literature.	-	-	-	7	17	4.708	0.464	-	-	-	11	12	4.522	0.511
Total	1	11	9	52	47			-	9	12	77	27		
Mean	Change = 4.108							Control = 3.974						
Std dev	= 0.9509							= 0.8107						
t-test value = 1.2195														

[a]Classifications: 1) Strongly Agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

Table 66. Descriptive data of responses by building principals concerning the criticism Teachers

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s	t-test
21. The trouble with the public schools today can be attributed in large part to the low quality of educational training teachers receive in schools of education.	1	2	2	10	9	4.000	1.103	-	1	4	13	5	3.957	0.767	0.16
22. Many teachers and schools have abolished all methods of overt physical discipline and as a result classroom conduct disintegrated.	2	1	-	16	5	3.875	1.076	1	4	4	13	1	3.391	0.988	1.60
23. The teacher education program has emphasized the "know how" of teaching to the detriment of the "know what."	-	4	3	14	3	3.667	0.917	-	4	10	8	1	3.261	0.810	1.61
24. The number of professional courses in teacher education programs are evasive and state certification requirements over-emphasize professional educational courses.	3	8	6	6	1	2.750	1.113	1	14	6	2	-	2.391	0.722	1.30
25. The teacher should spend more of his time with those students who have the greatest intellectual potential.	1	2	-	10	11	4.167	1.090	-	-	2	17	4	4.087	0.515	0.32
Total	7	17	11	56	29			2	23	26	53	11			
Mean	Change = 3.692							Control = 3.417							
Std dev	= 1.158							= 0.973							
t-test value = 1.9755** = Significant at the 0.05 level															

[a]Classifications: 1) Strongly agree; 2) Agree; 3) Undecided; 4) Disagree; 5) Strongly Disagree.

In completing the questionnaire's Part 4, the respondents were asked to select a category of three words, one of which would best fit the blank space left in the question. These categories, or classifications, were as follows:

1) Almost never - Almost none - 0 - 20%;
2) Seldom - A few - 20 - 40%;
3) Occasionally - About half - 40 - 60%;
4) Frequently - Many - 60 - 80%;
5) Constantly - Almost always - 80 -100%.

The responses were totaled for each sub-set and a mean, standard deviation, and pooled t-test calculated to determine the significance of any noted difference between the means. If a significant difference did exist, a pooled t-test was then calculated for each individual question in the sub-set to determine the question's contribution to the significant difference.

School board member

Intellectual self-expression The change school board members and the control school board members all saw their school's climate as supportive of intellectual self-expression with the control group expressing a slightly more positive answer. The mean reported for the change group in Table 67 was 4.0476 and the mean for the control group was 4.0915. Analysis through the pooled t-test indicated the difference was a negative 0.6946 and not significant.

Activity While neither board member group indicated more than a few aesthetic activities in their schools, the change school board members were more positive in the assessment of their climates. Table 68 presented the mean for the change board members as 2.043 and

Table 67. Descriptive data of responses by board members concerning the environment sub-set Intellectual Self-expression

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
1. _____ of the teachers assign grades fairly.	2	2	10	60	45	4.210	0.801	1	1	7	47	38	4.277	0.739
2. _____ of the teachers seem to respect student opinions on serious matters.	-	5	25	68	20	3.873	0.734	-	6	17	54	18	3.884	0.784
3. _____ of the teachers here appear to be interested and enthusiastic about what they are teaching.	1	5	13	63	35	4.077	0.811	-	3	12	53	24	4.065	0.723
Total	3	12	48	191	100			1	10	36	154	80		
Mean	Change = 4.0476							Control = 4.0915						
Std dev	= 0.8214							= 0.7493						
t-test value = (-0.6946)														

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 68. Descriptive data of responses by board members concerning the environment sub-set Activity

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
4. There are _____ copies of famous paintings hanging on the walls around school.	39	60	8	9	1	1.915	0.886	39	36	12	7	-	1.862	0.911
5. Those students who are interested in ballet and modern dance _____ get opportunities to perform in school.	60	34	10	11	3	1.839	1.086	52	24	11	5	2	1.734	1.007
6. Students around here can _____ be seen playing checkers, chess, working crossword puzzles, and engaging in other like activities in their spare time.	34	34	26	20	3	2.350	1.147	32	28	19	8	3	2.133	1.104
Total	133	128	44	40	7			123	88	42	20	5		
Mean	Change = 2.043							Control = 1.913						
Std dev	= 1.069							= 1.023						
t-test value = 1.5439														

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

the mean of the control board members as 1.913. The difference between the means caused a pooled t-test value of 1.5439. This value is not significant in this study, but further consideration of this variable was indicated.

Heterosexual expression Table 69 presented data that indicated more than half of the boys and girls in both change and control schools do engage in heterosexual expression with the change school students being slightly more inclined to so engage. The means indicated for the change school group was 3.626 as compared to 3.585 for the control school group. A t-test of 0.5631 was indicated. No significant difference of the means was denoted.

Paternalism Change school board members and control school board members differed significantly at the 0.05 level in their assessment of their schools' climate in regard to the sub-set paternalism. Change school board members saw the dress of the students to be a less problem than their counterparts. An analysis of the individual item t-tests presented in Table 70 showed that while each question possessed a marked difference in means, question 11 which pertained to the teachers' involvement in student dress contributed the most difference. A t-test value for the sub-set was a negative 2.3960**.

School spirit Change and control school board members all envisioned good school spirit at their schools, but the control school board members reported a higher degree of activity than did the change school board members. The mean for the change group was itemized in Table 71 as 3.703 which was exceeded by the 3.801 mean established by

Table 69. Descriptive data of responses by board members concerning the environment sub-set Heterosexual Expression

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
7. _____ of the boys and girls mix together and sit at the same table when eating in the cafeteria.	3	14	37	42	20	3.534	0.999	3	12	34	32	11	3.391	0.972
8. _____ of the boys and girls mix together during class break, during noon hours, etc.	1	14	40	45	18	3.551	0.921	-	10	32	37	11	3.544	0.850
9. There are _____ opportunities to work on projects with members of the opposite sex.	1	8	27	62	20	3.780	0.839	1	6	15	59	14	3.832	0.794
Total	5	36	104	149	58			4	26	81	128	36		
Mean	Change = 3.626							Control = 3.585						
Std dev	= 0.9319							= 0.8736						
t-test value = 0.5631														

[a]Classification:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 70. Descriptive data of responses by board members concerning the environment sub-set Paternalism

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s	t-test
10. Something is _____ said to students who come to school but are not neatly dressed.	32	39	25	20	2	2.331	1.102	18	29	26	18	3	2.564	1.103	-1.57
11. The teachers _____ express opinions about how a student should dress to come to school.	26	50	32	9	1	2.229	0.910	20	33	21	16	4	2.479	1.133	-1.92
12. Students and teachers _____ disagree on how students should dress for various after-school events.	28	43	36	6	2	2.226	0.937	22	34	23	15	-	2.330	1.010	-1.03
Total	86	132	93	35	5			60	96	70	49	7			
Mean	Change = 2.258							Control = 2.456							
Std dev	= 0.976							= 1.0795							

t-test value = $(-2.3960)^{**}$ = Significant at the 0.05 level

[a]Classifications:

1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 71. Descriptive data of responses by board members concerning the environment sub-set School Spirit

Question	Change schools 1	2	3	4	5	X	s	Control schools 1	2	3	4	5[a]	X	s
13. Students _____ get excited about athletic contests involving the school.	2	9	24	60	24	3.789	0.907	1	8	21	34	30	3.894	0.989
14. School spirit is expressed by _____ of the students.	2	12	22	70	12	3.661	0.860	-	5	28	47	14	3.745	0.775
15. There is _____ a feeling of excitement around here before a school event.	1	11	29	56	21	3.720	0.895	-	9	25	42	19	3.747	0.887
Total	5	32	75	186	57			1	22	74	123	63		
Mean	Change = 3.703							Control = 3.801						
Std dev	= 0.919							= 0.8698						
t-test value = (-1.3725)														

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

the control group. The difference between these means was reported as a negative 1.3725, and it was not considered significantly different.

Anti-Establishment Change and control school board members differed significantly in their opinions concerning this sub-set. Control schools indicated that students seldom were involved in malicious mischief. While change schools also indicated few problems, they were not as sure of their students' proper behavior. The change groups' average response was 2.117 and the control groups' mean was reported in Table 72 as 1.971. The pooled t-test was 2.1216** and was significant at the 0.05 level. The majority of the difference was attributed to question 16 concerning the damaging of school property.

Authoritarian The 21st question of the sub-set authoritarian was worded in such a manner that the responses to that question were not additive to the responses of the other two questions in the sub-set. A selection of a higher classification to questions 19 and 20 was indicative of a more authoritarian environment while a smaller classification response to the 21st question indicated a more structured environment. The responses to question 21 were listed in reversed order on the continuum so that the responses could be added. The number of responses for the first and fifth classifications were reversed as were the responses for the second and fourth classifications. Although the standard deviation remained the same for question 21, the adjusted mean was reported.

The difference in the adjusted means of responses between the change and control school board members was highly significant beyond the 0.001 level of significance. The pooled t-test value of a negative 5.5300 was

Table 72. Descriptive data of responses by board members concerning the environment sub-set Anti-Establishment

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s	t-test
16. School property is _____ damaged by students.	25	54	32	4	2	2.179	0.867	36	35	20	4	-	1.916	0.871	2.11
17. _____ of the school books have been torn, marked or written in.	21	50	28	11	1	2.288	0.918	21	50	16	7	-	2.108	0.827	1.41
18. _____ of the desks are defaced by knife or pencil marks.	34	59	15	4	2	1.956	0.856	34	39	14	5	1	1.925	0.912	0.16
Total	80	163	75	19	5			91	124	50	16	1			
Mean	Change = 2.117							Control = 1.971							
Std dev	= 0.7197							= 0.8740							

t-test value = 2.1216** = Significant at 0.05 level

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 73. Descriptive data of responses by board members concerning the environment sub-set Authoritarian

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s	t-test
19. "Get permission or be ready to suffer the consequences" is the attitude one hears _____ expressed around here.	30	46	21	13	5	2.278	1.105	25	36	11	13	4	2.270	1.156	-0.12
20. In _____ of the classes students have assigned seats.	23	37	20	21	5	2.509	1.173	11	9	20	24	21	3.412	1.321	-4.92
21. There are _____ comfortable places available where a student can go to just sit and relax.	20	32	23	30	11[b]	2.828[c]	1.260	2	10	17	39	26[c]	3.819[c]	1.026	-6.06[c]
Total	73	115	64	64	21			38	55	48	73	51			
Mean[c]	Change = 2.5400							Control = 3.2901							
Std dev[c]	= 1.1997							= 1.3730							
t-test value[c] = -5.5300**** = Significant at the 0.001 level															

[a]Classifications:

1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

[b]Recorded totals are reversed from actual responses so that the sub-set responses would be additive.

[c]Adjusted statistic according to reversed order of responses to question 21.

reported.

The individual t-tests for each question presented in Table 73 indicated a substantial difference in responses to questions 20 and 21. The change team board members envisioned a significantly less structured environment in their schools. Students appeared to have a greater degree of freedom of movement both in the classroom and in the school as a whole.

Superintendents

Intellectual self-expression A t-test value of a negative 1.0049 was reported in Table 74 which represented the statistical difference between the change school superintendents' mean of 4.0635 and the control school superintendents' average response of 4.2273. Both groups saw the climates in their schools as one in which the teachers appeared to be humane in their approach to students.

Activity The responses of the change school superintendents and the control school superintendents were very similar in this subset. The means recorded in Table 75 were 2.190 and 2.182 for the change and control groups, respectively. The calculated pooled t-test value was only 0.0510. No significant difference was indicated.

Heterosexual expression A highly significant difference was established between the responses of superintendents of change and control schools. Although the control school superintendents indicated about half or more of their students participated in heterosexual expression, the change school superintendents reported much more of such activities. The mean of the change groups' responses was recorded in

Table 74. Descriptive data of responses by superintendents concerning the environment sub-set Intellectual Self-expression

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
1. _____ of the teachers assign grades fairly.	3	-	1	10	8	3.909	1.306	1	-	1	10	10	4.273	0.935
2. _____ of the teachers seem to respect student opinions on serious matters.	-	2	2	13	5	4.045	1.046	1	-	2	13	6	4.045	0.899
3. _____ of the teachers here appear to be interested and enthusiastic about what they are teaching.	1	-	4	6	11	4.182	1.053	-	-	2	10	10	4.364	0.658
Total	4	2	7	29	24			2	-	5	33	26		
Mean	Change = 4.0635							Control = 4.2273						
Std dev	= 1.014							= 0.8375						

t-test value = (-1.0049)

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 75. Descriptive data of responses by superintendents concerning the environment sub-set Activity

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
4. There are _____ copies of famous paintings hanging on the walls around school.	7	13	2	-	-	1.773	0.612	4	9	4	4	1	2.500	1.144
5. Those students who are interested in ballet and modern dance _____ get opportunities to perform in school.	11	8	2	1	-	1.682	0.839	15	4	-	2	1	1.636	1.177
6. Students around here can _____ be seen playing checkers, chess, working crossword puzzles, and engaging in other like activities in their spare time.	1	3	11	7	-	3.091	0.811	4	12	-	5	1	2.409	1.182
Total	19	24	15	8	-			23	25	4	11	3		
Mean	Change = 2.190							Control = 2.182						
Std dev	= 0.9977							= 1.2141						
t-test value = 0.0510														

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 76 as 4.206 as compared to 3.530 for their counterparts. The t-test was 4.3450 which is significant at the 0.001 level. All questions were significant in their own right as indicated by the individual question t-tests.

Paternalism Control school superintendents reported that their teachers remind students about their dress on less than half the occasions offered, and this assessment was slightly higher than reported by the change superintendents. The change and the control superintendents' mean responses were 2.440 and 2.576, respectively. A negative 0.7443 pooled t-test value of 0.7443 was noted in Table 77.

School spirit The control superintendents saw their school as having significantly (at the 0.05 level) more school spirit than reported by the change superintendents even though the change superintendents did indicate more than half of their students entered into the festivities. This condition is reflected in the pooled t-test value of a negative 2.529 registered in Table 78. Individual t-tests indicate the majority of difference was recorded in the opinion about excitement generated by athletic contests.

Anti-Establishement The average response for both change and control superintendents was relatively similar in this sub-set. The means listed in Table 79 were 2.111 for the change superintendents and 2.016 for the control superintendents for a pooled t-test value of 0.6109. Both groups reported their students seldom damage school property.

Authoritarian The responses received to questions in the sub-set authoritarian were not directly additive. A larger response selection

Table 76. Descriptive data of responses by superintendents concerning the environment sub-set Heterosexual Expression

Question	Change schools							Control schools							t-test
	1	2	3	4	5	$\bar{X}$	s	1	2	3	4	5[a]	$\bar{X}$	s	
7. _____ of the boys and girls mix together and sit at the same table when eating in the cafeteria.	-	1	5	7	9	4.091	0.921	1	3	10	5	3	3.273	1.032	2.63
8. _____ of the boys and girls mix together during class break, during noon hours, etc.	-	-	4	11	7	4.227	0.922	-	1	11	6	4	3.591	0.854	2.07
9. There are _____ opportunities to work on projects with members of the opposite sex.	1	-	2	8	11	4.273	0.985	-	3	6	7	6	3.727	1.032	2.74
Total	1	1	11	26	27			1	7	27	18	13			
Mean	Change = 4.206							Control = 3.530							
Std dev	= 0.7861							= 0.9801							
t-test value = 4.3450**** = Significant at the 0.001 level															

[a]Classification:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 77. Descriptive data of responses by superintendents concerning the environment sub-set Paternalism

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
10. Something is _____ said to students who come to school but are not neatly dressed.	7	7	4	3	-	2.143	1.062	6	6	6	3	1	2.409	1.182
11. The teachers _____ express opinions about how a student should dress to come to school.	2	10	8	2	-	2.455	0.800	2	9	7	2	2	2.682	1.082
12. Students and teachers _____ disagree on how students should dress for various after-school events.	2	8	4	7	-	2,762	1.044	3	7	7	5	-	2.636	1.002
Total	11	25	16	12	-			11	22	20	15	3		
Mean	Change = 2.440							Control = 2.576						
Std dev	= 0.996							= 1.082						
t-test value = (-0.7443)														

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 78. Descriptive data of responses by superintendents concerning the environment sub-set School Spirit

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s	t-test
13. Students _____ get excited about athletic contests involving the school.	1	1	8	10	2	3.500	0.912	-	-	3	13	6	4.136	0.640	-2.28
14. School spirit is expressed by _____ of the students.	-	2	9	9	2	3.500	0.802	-	1	7	7	6	3.857	0.910	-0.89
15. There is _____ a feeling of excitement around here before a school event.	1	3	7	7	4	3.455	1.101	-	2	4	12	4	3.818	0.853	-0.66
Total	2	6	24	26	8			-	3	14	32	16			
Mean	Change = 3.587							Control = 3.952							
Std dev	= 0.816							= 0.812							
t-test value = (-2.529)** = Significant at the 0.05 level															

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 79. Descriptive data of responses by superintendents concerning the environment sub-set Anti-Establishment

Question	Change schools							Control schools						
	1	2	3	4	5	$\bar{X}$	s	1	2	3	4	5[a]	$\bar{X}$	s
16. School property is _____ damaged by students.	6	9	4	2	1	2.273	1.241	7	11	2	2	-	1.955	0.899
17. _____ of the school books have been torn, marked or written in.	5	9	6	2	-	2.227	0.922	3	15	3	1	-	2.091	0.684
18. _____ of the desks are defaced by knife or pencil marks.	6	9	6	-	1	2.136	0.990	5	14	2	1	-	1.955	0.722
Total	17	27	16	4	2			15	40	7	2	-		
Mean	Change = 2.111							Control = 2.016						
Std dev	= 0.8819							= 0.7723						
t-test value = 0.6109														

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

to questions 19 and 20 indicated a more authoritarian or structured environment while a larger response to question 21 indicated more freedom and less of a structured environment. The responses to question 21 were listed in reversed order on the continuum so that responses to all three questions could be added for the calculation of group statistics. The number of responses for the first and fifth classifications were reversed as were the responses for the second and fourth classifications. Although the standard deviation remained the same for question 21, the adjusted mean was reported.

The change school superintendents reported a less structured environment as compared to the control school superintendents. The calculated pooled t-test for the sub-set authoritarian was a negative 2.5105. This value was significant at the 0.05 level.

Analysis of the individual t-tests for questions in this sub-set revealed that while no question in itself was significantly different, questions 20 and 21 contributed the major portion of the sub-set's significant difference in means. The control school superintendents indicated their schools to have a more controlled student movement in the classroom and in the school as a whole.

Building principals

Intellectual self-expression Both change and control principals indicated they thought that a large majority of their teachers treated their students fairly and with dignity. The means reported in Table 81 were 4.145 and 4.188 for the change and control groups, respectively. The similarity of their responses was verified by the

Table 80. Descriptive data of responses by superintendents concerning the environment sub-set Authoritarian

Question	Change schools 1	2	3	4	5	X	s	Control schools 1	2	3	4	5[a]	X	s	t-test
19. "Get permission or be ready to suffer the consequences" is the attitude one hears _____ expressed around here.	4	8	7	2	-	2.333	0.913	7	8	6	-	1	2.091	1.019	0.59
20. In _____ of the classes students have assigned seats.	4	9	5	4	-	2.409	1.008	3	1	10	7	1	3.091	1.065	-1.84
21. There are _____ comfortable places available where a student can go to just sit and relax.	4	6	3	7	1[b]	2.762[c]	1.261	4	3	2	7	6[b]	3.363[c]	1.497	-1.43[c]
Total	12	23	15	13	1			12	12	18	14	8			
Mean[c]	Change = 2.5000							Control = 2.9062							
Std dev[c]	= 0.8809							= 1.6755							
t-test value[c] = (-2.5105) = Significant at the 0.05 level															

[a]Classification:

1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

[b]Recorded totals are reversed from actual responses so that the sub-set responses would be additive.

[c]Adjusted statistic according to reversed order of responses to question 21.

Table 81. Descriptive data of responses by building principals concerning the environment sub-set Intellectual Self-expression

Question	Change schools							Control schools						
	1	2	3	4	5	$\bar{X}$	s	1	2	3	4	5[a]	$\bar{X}$	s
1. _____ of the teachers assign grades fairly	-	-	3	14	7	4.167	0.637	-	-	2	8	13	4.478	0.665
2. _____ of the teachers seem to respect student opinions on serious matters.	-	1	1	16	6	4.125	0.680	-	-	4	16	3	3.957	0.562
3. _____ of the teachers here appear to be interested and enthusiastic about what they are teaching.	-	1	-	18	4	4.087	0.596	-	-	3	14	6	4.130	0.626
Total	-	2	4	48	17			-	-	9	38	22		
Mean	Change = 4.145							Control = 4.188						
Std dev	= 0.615							= 0.648						
t-test value = (-0.3993)														

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

pooled t-test value of negative 0.3992.

Activity The activities depicted in this sub-set were seldom accomplished according to the responses of both change and control principals. Their recorded average response was 2.0138 for the change school principals and 2.000 for their colleagues in the control schools. Table 82 contained the calculated t-test for the sub-set as 0.0493.

Heterosexual expression The change school principals joined their superintendent in their opinion about heterosexual activities, and their responses differed significantly from the control school principals. The control school principals estimated that more than one-half of their students indulged in heterosexual activities. The change principals indicated that significantly more students in their students expressed themselves heterosexually. Individual t-tests showed that the sub-set t-test value of 2.36 as reported in Table 83 was constructed nearly equally from each question.

Paternalism A substantial, but non-significant, difference was recorded in Table 84 in regard to the mean of 2.000 for the change school principals as compared to 2.246 for the control principals. Neither group perceived teachers in their school commenting more than 20 to 40 percent of the time about their students' questionable dress. A negative t-test value of 1.2654 was presented. No significant difference was noted between the means.

School spirit Slightly more school spirit was indicated by the control school principals. Table 85 exhibited means for the change school principals and control school principals of 3.435 and 3.565, respectively.

Table 82. Descriptive data of responses by building principals concerning the environment sub-set Activity

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
4. There are _____ copies of famous paintings hanging on the walls around school.	12	9	2	-	1	1.708	0.955	14	5	3	1	-	1.609	0.891
5. Those students who are interested in ballet and modern dance _____ get opportunities to perform in school.	18	2	4	-	-	1.417	0.776	15	4	1	1	2	1.739	1.287
6. Students around here can _____ be seen playing checkers, chess, working crossword puzzles, and engaging in other like activities in their spare time.	2	8	7	4	3	2.917	1.176	5	6	7	2	3	2.652	1.301
Total	32	19	13	4	4			34	15	11	4	5		
Mean	Change = 2.0138							Control = 2.000						
Std dev	= 1.1688							= 1.250						

t-test value = 0.0493

[a]Classifications:

1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 83. Descriptive data of responses by building principals concerning the environment sub-set Heterosexual Expression

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s	t-test
7. _____ of the boys and girls mix together and sit at the same table when eating in the cafeteria.	-	2	7	9	6	3.792	0.932	-	5	8	6	4	3.391	1.033	1.40
8. _____ of the boys and girls mix together during class break, during noon hours, etc.	-	1	5	13	5	3.917	0.776	-	3	7	9	4	3.609	0.941	1.23
9. There are _____ opportunities to work on projects with members of the opposite sex.	-	1	1	12	10	4.292	0.751	-	1	4	13	5	3.957	0.767	1.51
Total	4	13	34	21				-	9	19	28	13			
Mean	Change = 4.000							Control = 3.652							
Std dev	= 0.8392							= 0.9366							
t-test value = 2.36** = Significant at the 0.05 level															

[a]Classification:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 84. Descriptive data of responses by building principals concerning the environment sub-set Paternalism

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
10. Something is _____ said to students who come to school but are not neatly dressed.	13	7	4	-	-	1.625	0.770	10	6	3	3	1	2.087	1.240
11. The teachers _____ express opinions about how a student should dress to come to school.	9	7	4	3	1	2.167	1.204	8	6	3	6	-	2.304	1.222
12. Students and teachers _____ disagree on how students should dress for various after-school events.	7	11	2	1	3	2.250	1.294	4	11	4	4	-	2.348	0.982
Total	29	25	10	4	4			22	23	10	13	1		
Mean	Change = 2.000							Control = 2.246						
Std dev	= 1.1504							= 1.1420						
t-test value = (-1.2654)														

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 85. Descriptive data of responses by building principals concerning the environment sub-set School Spirit

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s
13. Students _____ get excited about athletic contests involving the school.	-	1	9	12	1	3.565	0.662	1	2	3	12	4	3.696	1.020
14. School spirit is expressed by _____ of the students.	1	1	11	11	-	3.333	0.761	2	1	8	10	2	3.391	1.033
15. There is _____ a feeling of excitement around here before a school event.	-	2	10	10	1	3.435	0.728	2	1	3	15	2	3.609	1.033
Total	1	4	30	33	2			5	4	14	37	8		
Mean	Change = 3.435							Control = 3.565						
Std dev	= 0.717							= 1.022						
t-test value = (-0.8689)														

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

The pooled t-test of a negative 0.8689 was evidenced in Table 85. There was no significant difference between the means of the responses.

Anti-Establishment A difference which was significant at the 0.01 level was reported between the mean of 1.928 reported by change school principals and 1.594 reported by control school principals. Control school principals indicated significantly less vandalism even though the change school principals reported vandalism seldom happened in their schools. While all questions contributed to the significance, the major contribution is attributable to the difference in responses to question 17. Table 86 contained the calculated t-test value for the sub-set of 2.855^{***}.

Authoritarian The responses recorded for question 21 were not additive to the other two questions to the sub-set authoritarian. The principals' answers were in reversed order from those of the other questions. To insure additivity, the total responses to classifications one and five were reversed as was the responses to classifications two and four. In this manner, a larger response to any of the questions to this sub-set would then indicate a more structured environment. Although the standard deviation remained the same for question 21, the adjusted mean was reported. All statistics based upon this adjust mean was also reported in Table 87 as adjusted.

The change school principals and the control school principals differed significantly in their assessment of their school's structured environment. The adjusted mean for the change school principal was 2.338 as compared to 3.0882 for the adjusted mean for the control school

Table 86. Descriptive data of responses by building principals concerning the environment sub-set Anti-Establishment

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s	t-test
16. School property is _____ damaged by students.	6	15	3	-	-	1.875	0.612	12	9	1	1	-	1.609	0.783	1.30
17. _____ of the school books have been torn, marked or written in.	5	14	4	-	-	1.957	0.638	12	9	2	-	-	1.565	0.662	2.04
18. _____ of the desks are defaced by knife or pencil marks.	8	12	3	1	-	1.875	0.797	12	9	1	1	-	1.609	0.783	1.15
Total	19	41	10	1	-			36	27	4	2	-			
Mean	Change = 1.928							Control = 1.594							
Std dev	= 0.6712							= 0.7340							
t-test value = 2.855*** = Significant at the 0.01 level															

[a]Classifications:
1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

Table 87. Descriptive data of responses by building principals concerning the environment sub-set Authoritarian

Question	Change schools 1	2	3	4	5	$\bar{X}$	s	Control schools 1	2	3	4	5[a]	$\bar{X}$	s	t-test
19. "Get permission or be ready to suffer the consequences" is the attitude one hears _____ expressed around here.	6	7	8	3	-	2.333	1.007	4	5	7	7	-	2.739	1.096	-1.32
20. In _____ of the classes students have assigned seats.	7	8	4	3	1	2.261	1.176	2	5	6	5	5	3.261	1.287	-2.75
21. There are _____ comfortable places available where a student can go to just sit and relax.	6	9	4	3	2[b]	2.417[c]	1.248	-	1	2	6	13[c]	4.409[c]	0.854	-6.26[c]
Total	19	24	16	9	3			6	11	15	18	18			
Mean[c]	Change = 2.338							Control = 3.0882							
Std dev[c]	= 1.1331							= 1.1459							
t-test value[c] = (-3.7435)**** = Significant at the 0.001 level															

[a]Classification:

1. Almost never - Almost none - 0-20%;
2. Seldom - A few - 20-40%;
3. Occasionally - About half - 40-60%;
4. Frequently - Many - 60-80%;
5. Constantly - Almost always - 80-100%.

[b]Recorded totals are reversed from actual responses so that the sub-set responses would be additive.

[c]Adjusted statistic according to reversed order of responses to question 21.

principals. This difference was significant at the 0.001 level of significance. A negative pooled t-test of 3.7435 was reported.

Once again, as was reported in both the board members' and the superintendents' responses, both questions 20 and 21 contributed significantly to the reported difference. The reported individual question t-tests were -2.75 and -6.26, respectively. The internal school structure was substantially less rigid in regard to student movement in the change school setting.

Summary of Data

Personal characteristics

Board members Analysis of responses concerning personal characteristics of change and control school board members revealed a striking similarity between the two groups in virtually every category. This similarity indicated little, if any, difference in the personal or social composition of Boards of Education of change or control schools. Differences between the board members included in this study and those included in similar studies in the 1960's were noted, however, and these variations were reported in this section.

The average age of change and control school board members were 48.27 and 47.62 years, respectively. Robinson, in 1968, reported an average age of 45.2 years and Tiedt, in 1962, reported an average age of 43.0 years. The average age of board members in this study closely agreed with those studies conducted by Counts, 1920, (16), Brown, 1951, (9) and the National Education Association Research Division, 1946, (47).

The proportion of males to females on change and control boards of education were identical for both groups. The reported board composition was 91.7 percent males and 8.3 percent females. This finding was virtually identical to similar recent studies. The male-dominated distribution is highly inconsistent with the general population distribution.

All members of both the change and control school boards reported at least one child in the family. A small, but not significant, difference was noted in the average number of children indicated with the change group reporting 3.70 children as compared to 4.01 children for the control group. Comparing the average total number of children to the number of children reported in school of 1.84 and 2.02 for the change and control school board members, respectively, it became apparent that almost exactly fifty percent of the board members' children for both groups are in school. Once again, the similarity of the change and control board members' personal characteristics was demonstrated. The 28.9 percent and 24.5 percent of the change and control groups, respectively, who reported no children in school was somewhat more than the Robinson study's reported percentage of 17.95.

Not unpredictably, 99.2 percent of the change school board members reported themselves to be or have been married, while 100.0 percent of the control school board members were married.

The data obtained concerning the years of schooling indicated an average of 14.26 years and 14.18 years of education for the change and control school board members, respectively. This represented a slight increase over the average number of years of schooling reported in

Table 88. A composite display of responses by the administrative change team members of change and control schools concerning personal characteristics

Variable	Change board members	Control board members	Change supts.	Control supts.	Change princi-pals	Control princi-pals
Age - years	48.27	47.62	46.43	47.77	41.83	44.65
Sex - males	91.7%	91.7%	100.0%	100.0%	100.0%	100.0%
females	8.3	8.3	0.0	0.0	0.0	0.0
Number of children	3.70	4.01	2.90	3.41	3.04	2.83
In school	1.84	2.02	1.70	1.95	1.83	1.71
Married	97.5%	100.0%	91.0%	100.0%	100.0%	95.7%
Education - years	14.26	14.18	18.52	17.82**	18.17	17.70
Degree						
No degree	6.8%	7.2%	0.0	0.0*	0.0	0.0
High school	53.4	51.5	0.0	0.0	0.0	0.0
Bachelors	28.0	29.9	0.0	0.0	0.0	0.0
Masters	5.1	5.2	47.8	72.7	70.8	87.0
Specialist	0.8	0.0	23.6	18.2	20.8	13.0
Doctorate	5.8	6.2	28.6	9.1	8.4	0.0
Income	$18,740	$19,295	$22,450	$22,275	$18,750	$17,065
Tenure - years	8.37	8.23	6.46	8.36	7.04	9.91
Political party						
Democrat	19.0%	14.0%	9.7%	18.2%	33.3%	39.1%
Republican	60.3	55.3	42.3	31.8	45.8	39.1
Independent	19.8	27.7	48.0	45.5	20.9	21.8
Occupation						
Prof., tech.	25.6%	25.0%	-	-	-	-
Bus, mgmt.	29.8	32.3				
Farm operator	31.4	21.9				
Religion						
Protestant	74.2%	75.8%	90.3%	81.8%	83.3%	78.3%
Catholic	21.7	22.1	0.0	9.1	16.7	21.7
Atheist	2.5	1.1	9.7	9.1	0.0	0.0

*Significant at the 0.10 level.

**Significant at the 0.05 level.

Robinson's study. Only 6.8 percent of the change group and 7.2 percent of the control group reported not obtaining a high school degree, while 39.7 percent and 41.3 percent of the change and control groups, respectively, had graduated from college with at least a bachelor's degree.

The number of years a board member had served on the board was very similar between the change school board members and the control school board members who both reported an average of over eight years. These figures are substantially higher than those reported by Robinson (5.18 years in 1968) and Tiedt (4.7 years in 1962). The difference represented a full three-year term average increase in tenure. The three-year increase in average age of board members reported in this study would appear to correlate with the three-year increase in tenure.

The average income reported by change school board members was $18,740 as compared to $19,295 reported by the control school board members. These figures are considerably higher than the average income reported in earlier studies, but the increase appears to reflect the general increase in income for the general population over the same length of time.

The political compositions of the boards included in this study were similar and to those reported in past studies. The change school board members reported 19.0 percent Democrats, 60.3 percent Republicans, and 19.8 percent Independents which compared to 14.0 percent Democrats, 55.3 percent Republicans, and 27.7 percent Independents reported by the control school board members.

The occupational distribution between the change school board

members and the control school board members was very similar, but it represented an atypical distribution when compared to the general population. Professional, technical, and business management occupations represented a total of 55.4 percent of the change school board members and 57.3 percent of the control group. These totals compare similarily to those reported in other studies. A difference in the farm operators percentage was noted with the change group reporting 31.4 percent farm operators and 21.9 percent for the control group. Both these percentages represent a decrease in farm representation on school boards as compared to previous studies. The off-migration from farms and the influence of the "one man-one vote" principle in recent elections, which has caused many districts to select their candidates from the entire population rather than structured sub-district areas, are considered to be contributing factors to the decrease of farm operators on school boards.

The religious preference of both the change and control boards were very similar with 74.2 percent and 75.8 percent Protestants, 21.7 percent and 22.1 percent Catholic, and 2.5 percent and 1.1 percent Atheists reported by the change and control groups, respectively. The increase in Catholicism was noted over previous studies. However, this increase was expected because of the German-Catholic influence in the general population for the State of Wisconsin.

The ancestral backgrounds of the change school board members and the control school board members were similar. Both groups indicated a strong German influence with 51.2 percent of the change groups' ancestry

originating in Middle Europe as compared to 59.3 percent for the control group; 37.1 percent and 23.8 percent from England for the change and control groups, respectively; and 11.9 percent and 16.3 percent ancestors from the Scandinavian countries for the change and control schools. This ethnic distribution was considered to represent the general population distribution. Ancestral origin was apparently not a factor which related to the readiness or willingness to initiate massive change.

Superintendents In general, the comparison of personal characteristics of change school superintendents and their control school counterparts revealed that in most areas the superintendents are similar. It was noted, however, that the change school superintendents had significantly more years of education.

All superintendents included randomly in the study were males of an average age of 46.43 years for the change superintendents as compared to 47.77 years for the control superintendents. They reported similar salaries with the change group earning an average of $22,450 as compared to $22,275 for the control group.

All of the control school superintendents were married while 91.0 percent of the change school superintendents were married, 4.5 percent single, and 4.5 percent separated. The change superintendents reported less children in their families with an average number of children of 2.900 as compared to 3.409 for the control superintendents. This ratio was also reflected in the number of children in school of 1.70 for the change group and 1.95 for the control group. The ratio of children in

and out of school was very similar with a calculated ratio of 55.4 percent for the change school superintendents and 57.2 percent for the control school superintendents.

A difference in average number of years of education, significant at the 0.05 level, was indicated between the response of 18.52 years for the change school superintendents and 17.82 years for the control school superintendents. This additional education translated into a significant difference at the 0.10 level in the number and type of degrees obtained, particularly on the doctorate level. The change superintendents reported 22.7 percent had obtained the specialist compared to 18.2 percent for the control group, and 27.3 percent possessed the doctorate as compared to 9.1 percent of the control group.

The change group superintendents reported an average tenure of 6.46 years in their present postion and the control group reported an average tenure of 8.36 years. While the difference of nearly two years represented a difference of approximately 30 percent tenure between the change and control groups, the high degree of variability in responses as reported in Table 24 prevented the difference from being statistically significant.

The political affiliation of the superintendents presented slight differences. The change school superintendents reported 9.7 percent Democrats, 42.3 percent Republicans, and 48.0 percent Independents. These figures compared with 18.2 percent Democrats, 31.8 percent Republicans, and 45.5 percent Independents as reported by the control school school superintendents. It was noted that the percentage of Independents

reported by the superintendents in both change and control groups were substantially higher than the percentages reported by either the board members or the principals. This difference could signify an openmindedness on the part of the superintendents or a reluctance to admit they were Democrats.

The religious affiliations of superintendents of both change and control schools were similar and predominantly Protestant. The change school superintendents were 90.3 percent Protestant along with 9.1 percent who responded to Atheistic beliefs. These figures compared to 81.8 percent Protestant, 9.1 percent Catholic, and 9.1 percent Atheist affiliations for the control superintendents. The percentage of superintendents in both groups who professed Atheisism was unexpected. These figures might indicate a trend toward the lessening of the importance of church affiliation in the hiring of the chief administrator of a school district.

The superintendents reported a variation in their responses to the question pertaining to ancestral background. While the percentage difference was not pronounced concerning the distribution of Scandinavian ancestry (24.1 percent to 13.5 percent for the change and control groups, respectively), a pronounced difference was noted in both the Middle Europe and the England classifications. Change school superintendents reported 33.4 percent Middle Europe ancestry and 42.5 percent from England as compared to 63.9 percent Middle Europe and 22.6 percent England for the control school superintendents. It would appear that change school superintendents' ancestry favored the British and Scandinavian areas rather than the Middle Europe influence.

Building principals The responses of change and control principals to the personal and social variables explored in this study were very similar for the most part. No differences were statistically different at the 0.05 level of significance or beyond. Several differences, while not significant, were considered to be important in and of themselves and might be important to confirm a trend in future studies.

The change principals included in this study were all males averaging nearly three years younger than their professional counterparts of the control schools. The change school principals' ages averaged 41.83 years as compared to 44.65 years for the control group. The range of 32 years for the change group and 27 years for the control group when coupled with a standard deviation of 8.4 years and 7.9 years for the change and control groups, respectively, tended to minimize the statistical significance. The pooled t-test of a negative 1.1774 was reported, and it was considered that future investigation of this variable is warranted.

All principals in both groups were male; all principals were married, although one control principal reported he was separated from his wife; and both groups also reported a similar number of children with the change group averaging 3.04 children as compared to the control group's average of 2.83. The ratio of children in and out of school was similar with the reported average of 1.83 children in school and 1.71 children in school for the change and control school principals, respectively.

Differences, albeit not significant, were noted in the variables

years of education, degree, and income. The change principals' averages indicated they have more years of schooling (18.17 years compared to 17.70 years), possess higher degrees (20.8 percent specialists and 8.3 percent doctorates as compared to 13.0 percent specialists and no doctorates), and receive more compensation ($18,750 as compared to $17,065) than their control school counterparts. These substantial differences were considered to merit consideration in future studies.

The change school principals have been in their present position nearly three years less than the control school principals. Their tenure averaged 7.04 years as compared to 9.91 years of tenure for the control school principals.

Both groups of principals were very similar in their responses to the variable of their political party affiliation. The change school principals indicated that 33.3 percent were Democrats, 45.8 percent were Republicans, and 20.9 percent were Independents. The control school principals indicated that 39.1 percent were Democrats, 39.1 percent were Republicans, and 21.8 percent were Independents. The percentage of Democratic affiliation reported by either principal group was more than double that which was reported by either the board members or the superintendents.

Finally, the religious preference of the principal groups was very similar. Of the change school principals, 83.3 percent were Protestants, and 16.7 percent were Catholic. The control school principals reported 78.3 percent were Protestants, and 21.7 percent were Catholics. Neither group contained any reported Atheists.

The ancestry of the control school principals were evenly divided between the Middle Europe and England areas with a slightly less influence from the Scandinavian area. The change school principals indicated that over half their number's ancestors originated in Germany. The reported percentages were 12.5 percent and 21.8 percent for the Scandinavian countries, 58.3 percent and 39.1 percent for the Middle Europe countries, and 29.2 and 39.1 percent for the English area for change and control school principals, respectively. The Middle Europe influence reported by the change principals is similar to the percentage reported by change school board members and considerably greater than the percentage reported by change school superintendents.

Organizational climate

Board members While the board members of the change schools perceived their school's organizational climate to be more open than their counterparts in the control school in regard to the sub-sets disengagement, esprit, and intimacy, the differences were not significant statistically. Additionally, both groups envisioned the organizational climate of their school to be more open than closed in each of the sub-sets of this section of the study. Table 89 displayed a composite of all t-tests for the organizational climate sub-sets for all three members of the administrative change team - board members, superintendents, and principals.

Superintendents The superintendents of both the change and control schools also perceived their school's organizational climate as more open in each of the sub-set categories. A highly significant

difference in responses between change and control school superintendents was observed in regard to the sub-set intimacy. The pooled t-test for this sub-set was a negative 3.8782, significant at the 0.001 level. The change group superintendents did not envision the social-need level of the teachers as being as satisfied as did the control group superintendents.

Building principals The principals of both the change and control schools agreed with the superintendents and school board members that the organizational climate in their buildings was more open than closed. Two significant differences between the change and control principal's responses were detected: 1) a pooled t-test value of 3.8182 was calculated for the sub-set esprit, significant at the 0.001 level; and 2) a pooled t-test value of 2.7006 was reported for the sub-set intimacy, significant at the 0.01 level. In these sub-sets, the change principals depicted their teachers as having higher morale and a greater sense of accomplishment as well as a sense of social interaction with other teachers than did the control group.

A special circumstance was observed in regard to the calculated differences of responses of superintendents and principals to the sub-set intimacy. The change superintendents' responses were highly significantly different from the control group as indicated by the pooled t-test value of a negative 3.8782. The difference between the change and control principals' responses, however, was diametrically opposed with a reported t-test value of a positive 2.7006. This difference may have been caused by an increase in autonomy of change

Table 89. A composite display of t-tests of difference in responses between change and control administrative team members in regard to organizational climate sub-sets

	Change schools compared to Control schools		
Sub-sets	Board members	Superintendents	Principals
Disengagement	-0.0459	0.6230	0.0647
Hindrance	0.5854	0.2117	0.1643
Esprit	1.1830	0.2270	3.8182****
Intimacy	0.4312	-3.8782****	2.7006***

***Significant at the 0.01 level.

****Significant at the 0.001 level.

school's administration in which the principal was actively involved with the teachers as an instructional leader. By being involved the principal analyzed the climate as highly open in terms of self-satisfaction. The superintendent, not being as directly involved with the building activity, may have indicated a lack of self-satisfaction on his own part and analyzed the climate as being more closed than his control superintendent counterpart.

Criticisms of public schools

Board members The change school board members and the control school board members were divided in the reactions to the criticisms presented about public schools. Only a very slight tendency to disagree with the criticisms was noted. Also, in all sub-sets except policy making, the responses between the change and control groups were very

similar. In the sub-set policy making, the change school board members tended to be more cosmopolitan in their approach to the local vs. outside influence in policy making.

Superintendents While superintendents basically disagreed with the criticisms presented in the survey instrument, the change school and control school superintendents displayed similar opinions to this section. A slight, but non-significant, difference of opinions concerning the sub-set policy making was observed. In this sub-set the change superintendents reported more disagreement with the statements than the control superintendents.

Building principals Principals also disagreed with the criticism statements, but not to the extent the superintendents did. Change school principals and control school principals differed significantly in their reported average responses to the questions in the sub-set teachers. The t-test value of 1.9755 was significant at the 0.05 level. The change school principals were significantly more defensive of teachers and teacher-training institutions. However, the reported means of 3.692 and 3.417 for the change and control groups, respectively, indicated no strong concensus of opinions to questions comprising this sub-set. Both groups were in disagreement with the criticisms concerning the sub-set curriculum with the change school principals reporting a mean of 4.108 which was higher than the 3.974 mean reported by the control principals.

Table 90. A composite display of t-tests of difference in responses between change and control administrative team members in regard to sub-sets of criticisms of public schools

Sub-sets	Change schools compared to Control schools		
	Board members	Superintendents	Principals
School costs	-0.1498	0.4455	-0.3203
Methods	0.1769	0.4679	-0.2461
Policy making	1.3869	1.0000	0.8178
Curriculum	0.2083	0.8868	1.2195
Teachers	0.1769	0.0484	1.9755**

**Significant at the 0.05 level.

School environment

Board members Perusal of Table 91, which offers a composite display of t-test values for each of the administrative change team members, indicated substantial difference in opinions concerning the school's environment as reported by board members in all but two of the sub-sets in this portion of the study, and a significant difference in three sub-sets.

Both change and control school board members indicated their school provided many opportunities for intellectual self-expression by the students, and there was relatively close agreement in their opinions to the questions in this sub-set. Similarly, the reported means of 3.626 and 3.585 for change and control groups, respectively, concerning the

Table 91. A composite display of t-tests of difference in responses between change and control administrative team members in regard to sub-sets of school environment

Sub-sets	Change schools compared to Control schools		
	Board members	Superintendents	Principals
Intellectual self-expression	-0.6946	-1.0049	-0.3992
Activity	1.5439	0.0510	0.0493
Heterosexual expression	0.5631	4.3450****	2.3600**
Paternalism	-2.3960**	-0.7443	-1.2654
School spirit	-1.3725	-2.5290**	-0.8689
Anti-Establishment	2.1216**	0.6109	2.8550***
Authoritarian	-5.5300****	-2.5105**	-3.7435****

**Significant at the 0.05 level.

***Significant at the 0.01 level.

****Significant at the 0.001 level.

sub-set heterosexual expression indicated similar opinions with the change group reporting slightly more mixing of the opposite sexes during the school hours.

Substantial differences were noted between the change and control school board members' responses to questions in the sub-sets school spirit and activity. Basically, change schools were reported to have fewer aesthetic opportunities and less school spirit among the student

body than the control schools. The t-tests calculated were a negative 1.3725 and a positive 1.5439 for the sub-sets school spirit and activity, respectively. Opinions in this area should be explored at greater depth in future studies.

The change and control school board members differed significantly in their reported opinions to the sub-set anti-establishment. While both reported low mean responses - 2.117 and 1.971, respectively, for change and control groups - to the questions, the change school board members envisioned significantly more vandalism in school than their counterparts. The calculated pooled t-test of 2.1216 was significant at the 0.05 level.

Another significant difference of opinions between change and control school board members was reported to the sub-set paternalism. Change school board members reported significantly less expression of personal guidelines concerning student dress in change schools as compared to control schools. The t-test value indicated the difference to be significant at the 0.05 level of significance.

A highly significant difference in opinions developed in the responses to the sub-set authoritarian. Control school board members indicated greater structure to their school's instructional environment. The calculated pooled t-test value of a negative 5.5300 was significant beyond the 0.001 level of significance.

Superintendents Superintendents of change and control schools reported similar opinions of four sub-sets (intellectual self-expression, activity, paternalism, and anti-establishment) and significantly

divergent opinions to questions in three sub-sets (heterosexual expression, school spirit, and authoritarian).

As with the board members, the control school superintendents saw their school as having significantly more school spirit than reported by change school superintendents. The difference was significant at the 0.05 level with a t-test value of a negative 2.529. This difference may be caused by a higher degree of independence in school by change school students which in turn may foster a tendency against outward display of emotions.

A highly significant difference was reported in the average responses to the sub-set heterosexual expression. While the control school superintendents indicated that boys and girls mixed socially on more than half of the observed opportunities, the change school superintendents reported significantly more heterosexual expression. The pooled t-test value of 4.3450 was significant beyond the 0.001 level of significance.

Building principals While similar opinions were reported in sub-sets concerning intellectual self-expression, activity, and school spirit, sufficient diversity in opinions to the sub-set paternalism, while not statistically significant, was reported to merit future study. The pooled t-test to the sub-set paternalism was a negative 1.2654 which indicated less enforcement of dress codes and personal values in the change schools.

A difference in opinions significant at the 0.05 level was reported in the responses to sub-set heterosexual expression. As did the

superintendents, the change school principals reported a significant increase in heterosexual activities in their change schools. The pooled t-test value was 2.3600. The reported means of 4.000 and 3.652 for the change and control school principals, respectively, indicated that boys and girls mixed socially in both schools.

The change school principals agreed with their board members that there was a significant increase in vandalism toward the school in the change schools. This might be indicative that students in a change school are not being taught or instructed in the social value of respect for property, but it is considered more likely that the change school student has more opportunity to be alone and unobserved in the SSSS school and that more physical non-verbal communication in destruction to the school results. While the reported means of 1.928 and 1.594 for the change and control schools, respectively, indicated that vandalism was seldom practiced in either school, the difference in responses never-the-less was significant at the 0.01 level.

Finally, a highly significant difference in the authority or structure of the school was noted in the responses to the sub-set authoritarian. Control school principals reported a structured situation significantly more times than the change school principals. The t-test value of a negative 3.7435 was significant at the 0.001 level.

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Findings

As previously stated, the problem addressed in this dissertation was the determination of those characteristics and attitudes displayed by members of the administrative change team (who have authorized and committed their district's resources to a massive change in the initiation of the Stanford School Scheduling System) who are significantly different from their counterparts in similar school districts who have not initiated SSSS. The four specific areas investigated were the administrative change team's personal characteristics, their perception of their school's organizational climate, their attitudes displayed toward selected criticisms of public secondary education, and their perception of their school's env ironmental press.

The change and the control schools included in this study were carefully matched in regard to geographical location, size of the school district, organization of the district's attendance units, and proximity to larger cities and university towns. Verified significant differences between characteristics and attitudes of change and control groups were considered to be associated with or related to the readiness and willingness to initiate massive educational change.

Four major areas of potential differences between change and control team members were investigated: 1) Personal characteristics, consisting of the variables age, sex, number of children, number of children in school (K-12), marital status, number of years of education,

degrees obtained, income, occupation, tenure, political affiliation, major ancestral background, and religious affiliation; 2) Organizational climate, consisting of the variables hindrance, disengagement, esprit, and intimacy; 3) Criticism of secondary education, consisting of the variables school costs, teaching methods, policy making, curriculum, and teachers; and 4) Environmental achievement press, consisting of intellectual self-expression, activity, heterosexual expression, paternalism, school spirit, anti-establishment, and authoritarian.

The physical characteristics of the board members, superintendents, and building principals were strikingly similar when the change and control groups were compared. Indeed, the only significant difference verified in this study was related to the greater number of years of schooling obtained by change superintendents. Several substantial differences of board members considered in this study and those included in previous studies were noted. Specifically, the length of service on a board increased an average of three years while both the years of schooling and income were also increasing since the study of Robinson in 1968. The number of farm operators elected to the boards appeared to be decreasing. Within the groups, principals of change schools showed substantial, but not significant, differences in earning higher salaries, tenure in the present position (nearly three years less time), and having approximately half a year more schooling than the control principals. Generally, the physical characteristics comparisons of all groups must be noted for their similarities rather than their differences.

The opinions expressed by change and control school board members, superintendents, and building principals in regard to organizational climate and secondary school criticisms for the most part were similar. Table 92 contains the variables to which a significant difference was indicated. With the exception of the sub-set authoritarian, there was no consistency of significant difference responses between groups of the administrative change team. This was not unexpected. Board members, superintendents, and building principals each have their own special areas of responsibility to the overall school program, and while discharging these responsibilities they would perceive and react to a situation from a different point of view. The layman viewpoint of the board members may differ substantially from the technical viewpoint of the building principals in terms, for example, of necessity, relevancy, or difficulty.

The board members tended to be more divided in their opinions than were superintendents and building principals vis-a-vis the three areas of organizational climate, criticisms, and environmental achievement press. One reason might have been the lack of, or minimal personal contact and knowledge of the everyday routine and atmosphere of the survey school on the part of the board members. Another reason might have been that the professional members of the change team may have a tendency to verbalize opinions about what "ought to be" rather than report the conditions they actually believe exists. This possibility, for example, might explain why both change and control groups of superintendents and principals reported open climates in their school for all of the sub-sets

Table 92. Composite presentation of the level of significant differerences calculated for those variables for which the null hypotheses were rejected.

Variables	Board members	Superintendents	Building principals
Personal characteristics			
Years of education		0.05	
Degrees		0.10[a]	
Organizational climate			
Esprit			0.001
Intimacy		-0.001[b]	0.01
Criticisms			
Teachers			0.05
Environmental press			
Heterosexual expression		0.001	0.05
Paternalism	-0.05		
School spirit		-0.05	
Anti-Establishment	0.05		0.01
Authoritarian	-0.001	-0.05	-0.001

[a]Not significant in this study. Reported for further study.

[b]Change groups were compared to control groups. The minus sign represents a negative correlation.

in the area of organizational climate.

Nearly half of the comparisons to the sub-sets in the area of environmental achievement press resulted in significant differences between change and control groups. Also, a consistency of differences developed with all three members of the change team recording similar significant differences to the sub-set authoritarian, and two of the three groups registering significant differences to the sub-sets heterosexual expression and anti-establishment. Hopefully, the initiation of SSSS scheduling involves a much more pronounced change, physically and philosophically, than simply changing a schedule. The major difference between a traditional school and a "new design" school may well be in the environment and the ramifications of the influence of the environmental achievement press to the educational obtainment of the individual student. Generally speaking, the change team members perceived the SSSS school as being significantly different from the traditional school in the following ways: 1) the SSSS school is much less rigidly structured both in and out of the classroom, and the students have more to say about how they spend their productive time; 2) students become involved in more activities with the opposite sex in the routine of their school day; 3) vandalism, although not a substantial problem, is more possible and prevalent in the open environment of the SSSS school; and 4) less emphasis is placed on the perpetuation or generation of traditional values such as dress codes and school spirit.

Conclusions

The conclusions established in this study were presented as they related to each member of the administrative change team and their educational perceptions and personal attributes.

Board members

Within the limitations of the investigation the following conclusions appear warranted concerning board members:

1) There were no significant differences in regard to their personal characteristics between the change and control school board members.
2) The "average" change school board member is a male who is 48 years old, served on the board for the past eight years, married with four children - two of whom are in the public school system, has attended school more than 14 years, has an annual income of $18,740, is a Protestant by faith, a Republican, from middle European stock, and is a business or professional man in his community.
3) Board members are serving more years on the board than in previous times.
4) There were no significant differences in regard to their opinions concerning organizational climate between the change and control school board members.
5) Both change and control board members perceived their schools' climate to be open.
6) There is no significant difference in perceptions concerning

criticisms of secondary public schools between change and control school board members.

7) There is no significant difference in regard to opinions concerning the environmental press sub-sets intellectual self-expression, activity, heterosexual expression, and school spirit between change and control school board members.

8) There is a significant difference in regard to perceptions concerning the environmental press sub-sets paternalism, anti-establishment, and authoritarian between change and control school board members.

Superintendents

1) There are no significant differences in regard to personal characteristics for all variables except years of education between the change and control superintendents.

2) There is a significant difference in regard to the number of years of schooling between change and control superintendents.

3) The "average" change school superintendent is a married male who is 46 years old, and has three children - two of whom are still in public schools. He is a highly educated individual with 18½ years of education, and possesses a higher degree than his job demands. He remains in a position two years less time than other superintendents, earns $22,450 a year, considers himself an "independent" voter, and is a member of a Protestant church.

4) There are no significant differences in regard to opinions

toward the organizational climate sub-sets disengagement, hindrance, and esprit between change and control school superintendents.

5) There is a significant difference in regard to opinions concerning the organizational climate sub-set intimacy between change and control school superintendents.

6) The superintendents of both change and control schools reported the organizational climate of their schools to be open.

7) There are no significant differences in regard to opinions in the area of criticisms of secondary public schools between change and control school superintendents.

8) There is no significant difference in regard to opinions to the environmental achievement press sub-sets intellectual self-expression, activity, paternalism, and school spirit between change and control school superintendents.

9) There are significant differences in regard to opinions to the environmental achievement press sub-sets heterosexual expression, anti-establishment, and authoritarian between change and control school superintendents.

Building principals

The following conclusions are presented concerning building principals:

1) There were no significant differences in regard to personal characteristics between the change and control building principals.

2) The "average" change school principal is 42 years old, a family man with two of his three children in public schools, well-educated with over 18 years of education and possessing hours beyond his master's degree. He commands a higher salary at $18,750 than his control colleagues, and has remained in his position three years less time. He is a Republican and a Protestant.

3) There are no significant differences in regard to opinions to the organizational climate sub-sets disengagement and hindrance between change and control building principals.

4) There are significant differences in regard to opinions to the organizational climate sub-sets esprit and intimacy between change and control building principals.

5) Both the change and the control building principals indicated their schools' climate to be open in regard to each sub-set in the organizational climate section.

6) There were no significant differences in regard to their opinions to the criticisms of secondary public school sub-sets school costs, teaching methods and procedures, policy making, and curriculum between change and control building principals.

7) There is a significant difference in regard to opinions to the criticism sub-set teachers between change and control building principals.

8) There were no significant differences in regard to opinions to to the environmental achievement press sub-sets intellectual

self-expression, activity, paternalism, or school spirit between change and control building principals.

9) There were significant differences in regard to their opinions to the environmental achievement press sub-sets heterosexual expression, anti-establishement, and authoritarian between change and control building principals.

Recommendations

The recommendation section has been divided into three areas: 1) use of the findings, 2) limitations, and 3) additional research.

Use of the findings

The need for accurate evaluation of current and future innovations and their implementation into the local school system remains a pressing and immediate concern of administrative change teams. In order for a change to be meaningful, significant, and lasting within a given school district, the innovation must be fully supported by the Board of Education, the superintendent, and the building principal.

This study has demonstrated that the personal and social characteristics of the administrative team members do not vary with the readiness or willingness to initiate massive educational change as indicated by the adoption of SSSS. Indeed, the years of schooling of the team members appeared to be the one, single personal variable which was shown to differ by groups. It was encouraging that more years of graduate training appears to be associated with the readiness and willingness to initiate educational change. Administrators usually rank the influence

of graduate school as a very minimal influence on their behavior. All other significant variables were concerned with attitudes and opinions. Change school administrative team members were more open in their assessment of climate and structure of their schools, and less susceptible to criticisms of education.

The similarities between members of change and control school administrative teams suggested the possibility that massive educational change could be initiated by the "average" existing team members. The problem, then, becomes one of motivation and changing of opinions or the system of personal rewards to those which are conducive to massive educational change. Involvement in a meaningful sense may be indicative of successful initiation of massive change.

When replacement of an individual member of the administrative change team becomes a necessity, the personal profiles of change members presented in this study and their significant variances in attitudes and opinions could well be considered in the selection of a replacement. However, an individual must be considered an entity unto himself, and must be judged as he relates as a human being rather than a fragmented statistical creation. An individual's creativity, his successful relationship to other members of the change team, and his own unique propensity for change has not been quantified in this study and these characteristics should also be considered in the replacement of a team member.

Limitations

The validity of the questions used in the questionnaire was established in previous studies. However, the original instruments used by Halpin, Robinson, and Tolsma and Hopper were abbreviated for inclusion in this study. It is possible that different results may have resulted had their full instruments been used.

The reliability of the items used in the questionnaire also was established in previous studies. The findings of this study were based upon a return of 81.6 percent of the questionnaires. A telephone "spot-check" of the non-respondents' answers to selected items in each section revealed findings approximating those received from the original respondents. It was assumed the balance of the non-respondents would reply in a similar manner.

Selection of both the change and the control schools were limited to several major criteria. It is possible that more stringent criteria would further discriminate between replies of the change and control groups.

The similarity of responses received from board members for the section of the study examining organizational climate may be indicative of the school board members' unfamiliarity of the inner-structure of the survey schools and not necessarily a consensus of opinions.

The mailed questionnaire technique of collecting data had the obvious advantages of gathering data economically in terms of both time and money while allowing the researcher to broaden the geographic scope of the study. However, the questionnaire does have several inherent

limitations. Among those are lack of personal contact and involvement with the respondents to allow hypothesizing beyond the data, and questions may be interpreted in a different manner by the individual respondents.

Additional research

The implications for further research is a major benefit derived from formalized research projects. The findings of this study manifested a number of educational research projects for further study.

While not proven statistically different, several personal characteristics, attitudes, and opinions tested in this study for each of the administrative change team members were substantially different. It is recommended that additional refinement of the gathering instrument and the identification of change and control schools be attempted and that these substantially different variables again be tested for their contribution toward the readiness and willingness to initiate educational change.

The statistical profiles of the personal and social characteristics of board members, superintendents, and building principals were developed and presented in this study. A replication of this study should be conducted in future years to determine the changes, patterns, and trends of the administrative change team composition.

It has been generally assumed that the members of the board of education reflect the desires of the community as a whole and the power structure in particular since their position is elective rather than appointive. Little research has been conducted to determine the degree

of correlation of attitudes and opinions between the community and the administrative change team, particularly as it would apply to the determination of the community's readiness and willingness to accept massive educational change. Such an investigation is long overdue!

This study has shown significant differences between the manner in which the change and control groups envisioned the environmental achievement press of their schools. An extensive study should be undertaken to identify and evaluate these differences in terms of the academic and personal development of the students to determine if the "new design" procedures and philosophies actually make a positive contribution. A cause and effect study involving the actual transition from a traditional to a "new design" concept would be helpful.

Massive educational change may be initiated by any member of the administrative change team. The review of the literature failed to disclose any studies which have dealt with the intrinsic personal motivational force that caused members to suggest a massive educational change and to support the change through to its initiation. A study is recommended to identify the intrinsic motivational forces which allowed the conception and initiation of change. Districts that have initiated SSSS and since reverted back to a traditional approach should also be included and successful and unsuccessful program initiation be correlated against the various motivational forces.

A detailed systems analysis study of the techniques, procedures, time-lines, and allocation of material and personal resources required for the successful initiation of a "new design" educational program

should be undertaken to provide information and guidance for districts contemplating similar projects.

Opinions received in this study indicated that the role expectations of the board members, superintendents, and building principals may result in a variation of opinions and priorities in their responses because of the manner in which their roles allowed them to respond. Several instances were noted which indicated that board members were not familiar with the inner-workings of the survey school. It is recommended that a study be undertaken to identify the role expectations of the administrative change team members in relation to the successful initiation of massive educational change and to recommend techniques for the continual improvement of communications between the members of the administrative change team.

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APPENDIX A: CHANGE TEAM REQUEST FORM

Please return to: Robert D. Eastman, Principal
Central Junior High School
Newton, Iowa 50208

Sample School _____ City _____ State _____

Point In Time _____

Please complete the names and addresses for the following members of the Educational Change Team for the sample school and point in time indicated above. Thank you for your cooperation. Without it, this study would not be possible.

Superintendent: _____ Address _____

Building Principal: _____

Board Members: _____

_____

_____

_____

_____

_____

_____

_____

APPENDIX B: QUESTIONNAIRE

Respondents Name _____ Address _____

* * * * * * * * * * * * * * * * * * * *

PART 1

1. Age _____ Sex _____ Number of Children _____
   Number of Children in School, K-12 _____

2. Marital Status: Single _____ Married _____ Divorced _____
   Separated _____ Widowed _____

3. Please circle the number of years of school you have completed:
   1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

4. Please circle your highest degree obtained: H.S., B.A., M.A., EdS, PhD.

5. Check the catagory which most nearly represents your income for 1971:

Under $5,000	_____	$20,000 to $25,000	_____
$5,000 to $10,000	_____	$25,000 to $30,000	_____
$10,000 to $15,000	_____	$30,000 to $35,000	_____
$15,000 to $20,000	_____	Over $35,000	_____

6. Please check the category which best fits your occupation:

_____ Professional and Technical

_____ Self-employed Businessman, Manager, or Official

_____ Clerical and Sales Worker

_____ Office Worker

_____ Farm Operative

_____ Retired

_____ Other _____

_____ Skilled Worker

_____ Semi-skilled Worker

_____ Unskilled Worker

_____ Unemployed

_____ Housewife

_____ Private Income, Not Employed

7. How many years have you served in your present educational position? _____
   (Years on board need not be consecutive; if not presently on the board, give total years; if you are an administrator who has moved to another district, total years in the study district.)

8. What is your political affiliation: Democrat _____ Republican _____
   No party _____ Other _____

9. What is your major ancestorial background? (German, Irish, etc.) _____

10. What is your religious affiliation? _____ None _____
    (List specific denomination)

Survey School _____ Point In Time _____

* * * * * * * * * * * * * *

Part 2

Please give your impressions of the survey school by circling your selections. The responses are keyed as follows:

1. Rarely occurs
2. Sometimes occurs
3. Often occurs
4. Very frequently occurs

1.	The mannerisms of teachers at this school are annoying.	1 2 3 4
2.	There is a minority group of teachers who always oppose the majority.	1 2 3 4
3.	Teachers exert group pressure on non-conforming faculty members.	1 2 3 4
4.	Teachers seek special favors from the principal.	1 2 3 4
5.	Teachers at this school stay by themselves.	1 2 3 4
6.	Teachers talk about leaving the school system.	1 2 3 4
7.	Routine duties interfere with the job of teaching.	1 2 3 4
8.	Teachers have too many committee requirements.	1 2 3 4
9.	Administrative paper work is burdensome at this school.	1 2 3 4
10.	Instructions for the operation of teaching aids are available.	1 2 3 4
11.	Sufficient time is given to prepare administrative reports.	1 2 3 4
12.	The morale of the teachers is high.	1 2 3 4
13.	The teachers accomplish their work with great vim, vigor, and pleasure.	1 2 3 4
14.	Custodial service is available when needed.	1 2 3 4
15.	Most teachers here accept the faults of their colleagues.	1 2 3 4
16.	Teachers spend time after school with students who have individual problems.	1 2 3 4
17.	Teachers' closest friends are other faculty members at this school.	1 2 3 4
18.	Teachers invite other faculty members to visit them at their homes.	1 2 3 4
19.	Teachers talk about their personal life to other faculty members.	1 2 3 4
20.	Teachers know the family background of other faculty members.	1 2 3 4

Part 2, Cont.

21.	There is considerable laughter when teachers gather together.	1	2	3	4
22.	Teachers work together preparing administrative reports.	1	2	3	4
23.	Extra books are available for classroom use.	1	2	3	4
24.	Students progress reports require too much work.	1	2	3	4

* * * * * * * * * * * * * *

PART 3

Please give your impressions by circling your selections. The responses are keyed as follows:

1. Strongly Agree, SA
2. Agree, A
3. Undecided, U
4. Disagree, D.
5. Strongly Disagree, SD

		SA	A	U	D	SD
1.	The schools being constructed today are too luxurious and costly.	1	2	3	4	5
2.	The more money or less money available to a school has very little to do with the quality of the district's educational program.	1	2	3	4	5
3.	Serious consideration should be given to increasing the pupil/teacher ratio as a means of lowering costs.	1	2	3	4	5
4.	There are adequate funds for essentials, but too many trimmings use up funds.	1	2	3	4	5
5.	Considering the efficiency of job performance, public school administrators' salaries are too high.	1	2	3	4	5
6.	The schools have been taken over by the modern "progressive" educators.	1	2	3	4	5
7.	Such titles as Schools Without Scholars, Educational Wastelands, and Quackery in the Public Schools are very descriptive of the current public school scene.	1	2	3	4	5
8.	Lax discipline in the public school is contributing to the increase in juvenile deliquency.	1	2	3	4	5
9.	Requirements for a "passing" grade should be the same for every child.	1	2	3	4	5
10.	Schools are trying to spread themselves too thin when they subscribe to the phrase "all the children of all the people need to be educated.	1	2	3	4	5

Part 3, Cont.

		SA	A	U	D	SD
11.	Public education is the exclusive concern of state and local government and any form of federal aid to education imperils this principle.	1	2	3	4	5
12.	The control of our schools must be returned to the parents and communities whose traditional right it is to exercise such control.	1	2	3	4	5
13.	The State Department of Public Instruction has too much power over local school districts.	1	2	3	4	5
14.	Professional educators should play a less prominent role in determining the goals of education.	1	2	3	4	5
15.	The State Department of Public Instruction should approve all school districts which the patrons are willing to support.	1	2	3	4	5
16.	The public schools are not teaching the fundamentals as well today as they used to.	1	2	3	4	5
17.	Schools should acknowledge that academic subjects are more valuable than vocational subjects by adopting a dual grading system.	1	2	3	4	5
18.	The life adjustment education movement is replacing intellectual training with soft social programs in most public school systems.	1	2	3	4	5
19.	Group discussions on social problems take emphasis away from the fundamental academic subjects.	1	2	3	4	5
20.	College prep students should be discouraged from taking such frills as driver education, vocational courses, art, music, and literature.	1	2	3	4	5
21.	The trouble with the public schools today can be attributed in large part to the low quality of educational training teachers receive in schools of education.	1	2	3	4	5
22.	Many teachers and schools have abolished all methods of overt physical discipline and as a result classroom conduct disintegrated.	1	2	3	4	5
23.	The teacher education program has emphasized the "know how" of teaching to the detriment of the "know what".	1	2	3	4	5
24.	The number of professional courses in teacher education programs are evasive and state certification requirements over-emphasize professional educational courses.	1	2	3	4	5
25.	The teacher should spend more of his time with those students who have the greatest intellectual potential.	1	2	3	4	5

* * * * * * * * * * * * *

PART 4

Please give your impressions of the survey school by circling your selections. The responses are keyed as follows:

1. Almost never - Almost none - 0-20%
2. Seldom - A few - 20-40%
3. Occasionally - About half - 40-60%
4. Frequently - Many - 60-80%
5. Constantly - Almost always - 80-100%

1.	_____ of the teachers assign grades fairly.	1 2 3 4 5
2.	_____ of the teachers seem to respect student opinions on serious matters.	1 2 3 4 5
3.	_____ of the teachers here appear to be interested and enthusiastic about what they are teaching.	1 2 3 4 5
4.	There are _____ copies of famous paintings hanging on the walls around school.	1 2 3 4 5
5.	Those students who are interested in ballet and modern dance _____ get opportunities to perform in school.	1 2 3 4 5
6.	Students around here can _____ be seen playing checkers, chess, working crossword puzzles, and engaging in other like activities in their spare time	1 2 3 4 5
7.	_____ of the boys and girls mix together and sit at the same table when eating in the cafeteria.	1 2 3 4 5
8.	_____ of the boys and girls mix together during class break, during noon hours, etc.	1 2 3 4 5
9.	There are _____ opportunities to work on projects with members of the opposite sex.	1 2 3 4 5
10.	Something is _____ said to students who come to school but are not neatly dressed.	1 2 3 4 5
11.	The teachers _____ express opinions about how a student should dress to come to school.	1 2 3 4 5
12.	Students and teachers _____ disagree on how students should dress for various after-school events.	1 2 3 4 5
13.	Students _____ get excited about athletic contests involving the school.	1 2 3 4 5
14.	School spirit is expressed by _____ of the students.	1 2 3 4 5
15.	There is _____ a feeling of excitement around here before a school event.	1 2 3 4 5

Part 4, Cont.

16.	School property is _____ damaged by students.	1	2	3	4	5
17.	_____ of the school books have been torn, marked or written in.	1	2	3	4	5
18.	_____ of the desks are defaced by knife or pencil marks.	1	2	3	4	5
19.	"Get permission or be ready to suffer the consequences" is the attitude one hears _____ expressed around here.	1	2	3	4	5
20.	In _____ of the classes students have assigned seats.	1	2	3	4	5
21.	There are _____ comfortable places available where a student can go to just sit and relax.	1	2	3	4	5

APPENDIX C: COVER LETTERS

NEWTON COMMUNITY SCHOOLS

You have been personally selected to take part in a research study to determine the personal attributes and educational attitudes exhibited by board members, superintendents, and building principals (educational change team) which contribute to a readiness and willingness to initiate massive educational change. You and other members of the change team from your school district have been matched to another school district not only by similarity in size and location, but also in time as this study goes back in time up to five school years for its participants.

You cannot be replaced! The in-time aspect of the study makes you a very special person. Your response to the enclosed questionnaire is essential. No individual, school, or district will be identified in the study, and all returns will be treated in the strictest of confidences. You will be sent a resume' of the results of the study upon completion.

Please complete the attached questionnaire and return it as soon as possible. Since your first answer to a question will usually be the most accurate, please work as rapidly and accurately as you can. Will you be able to complete the questionnaire today, please?

Thank you very much for your cooperation. It is greatly appreciated. We have had fun putting this questionnaire together - we hope you will enjoy responding to it.

Very truly yours,

Robert D. Eastman, Principal
Central Junior High School
100 N 3rd Ave E
Newton, Iowa 50208

Richard P. Manatt
Associate Professor of Education
Iowa State University
Ames, Iowa 50010

Hello, again! Several weeks ago you were invited to participate in a survey to determine the personal attributes and educational attitudes exhibited by board members, superintendents, and principals which might contribute to a readiness and willingness to initiate educational changes. We miss you!

You cannot be replaced! The in-time aspect of the study makes your response the only one that can be used in the survey. Another respondent in your district or any other district cannot be used as your substitute. Your response is essential. I would like to mention again that no individual, school, or district will be identified in the study, and all returns will be treated in the strictest of confidences.

There can be a multiplicity of reasons that your questionnaire has not reached us. I realize how busy this season can be for everyone. It is also possible that you have never received the questionnaire, or that your response has been lost in the return mail. Therefore, I have enclosed another questionnaire, and I hope you will find the time to complete and return it as soon as possible.

Thank you again for your cooperation. The response has been most gratifying.

Very truly yours,

Robert D. Eastman, Principal
Central Junior High School
100 N 3rd Ave E
Newton, Iowa 50208

Richard P. Manatt
Associate Professor of Education
Iowa State University
Ames, Iowa 50010